

Stereo Review

MARCH 1989 \$2.50

TAPE RECORDING SPECIAL

HOW TO GET THE MOST
OUT OF YOUR TAPE DECK

TAPE BUYING GUIDE

IN-WALL LOUDSPEAKERS

LAB TESTS:
PIONEER CASSETTE DECK
CARVER RECEIVER
SHERWOOD CD PLAYER
...AND MORE



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Marlboro Red or Longhorn 100's—
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16 mg "tar," 1.0 mg nicotine
av. per cigarette, FTC Report Feb. 85



There. In the grillcloth.

That 1½" diameter hole is actually the woofer in our full-range, bookshelf-sized AST-1 speakers.

Really. A clean 20,000Hz all the way down to a window-rattling 28Hz, without an oversized bass driver or big, clunky subwoofer to stash under a couch or behind a curtain.



Our AST system comes with two AST speakers, an AST amplifier, an AST cartridge and an additional cartridge that allows the use of conventional speakers.

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Our patented AST combines the superior imaging and point source characteristics of small-enclosure speakers with the superb bass response of large-enclosure speakers.

Giving you the largest possible sound in the smallest possible space.

Explained quite simply, we created a speaker, amplifier and processing cartridge system that provides negative impedance drive to help overcome inherent voice coil resistance, thereby mechanically damping the cone, so that even a slight vibration will excite the air in the enclosure, in essence creating an air-woofer, and...

On second thought, this is perhaps not the time or place for a full explanation.

The proper time and place is, however, as soon as you can get to your authorized Yamaha audio component dealer.

He'll give you a full explanation of the technology behind our remarkable new AST-1 full-range bookshelf speakers.

And if you're not sure you'll understand, you can always rely on two other remarkable pieces of technology.

Your ears.

YAMAHA

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11¾" high. 7½" wide. 28Hz deep.



Stereo Review

BULLETIN.....	7	TECHNICAL TALK.....	36
LETTERS.....	10	POPULAR MUSIC.....	106
NEW PRODUCTS.....	17	CLASSICAL MUSIC.....	119
AUDIO Q&A.....	30	RECORD MAKERS.....	134
SIGNALS.....	32	THE HIGH END.....	136

EQUIPMENT

HIRSCH-HOUCK LABS EQUIPMENT TEST REPORTS	41
Pioneer CT-S800 Cassette Deck, page 41	
Wharfedale Diamond III Speaker, page 43	
Sherwood CD-1160R Compact Disc Player, page 46	
Carver Model 6250 AM/FM Receiver, page 50	
AudioSource EQ Ten Equalizer/Analyzer, page 54	
TAPE RECORDING	82
How to get the most out of your cassette deck <i>by Craig Stark</i>	
TAPE BUYING GUIDE	87
Features, specs, and prices of blank tapes	
SPEAKER OF THE HOUSE	91
Stylish in-wall speakers are beginning to rival boxed speakers in sound quality <i>by Warren Berger</i>	
SYSTEMS	96
Updating an entertainment console <i>by Rebecca Day</i>	

MUSIC

THE NEW JAZZ	98
Today's young "neoboppers" are dedicated musicians with a keen sense of jazz history <i>by Chris Albertson</i>	
BEST RECORDINGS OF THE MONTH	103
Lucinda Williams, Strauss's <i>Also sprach Zarathustra</i> , Michelle Shocked, and Liszt's piano concertos	

Cover: See page 41 for test report on the Pioneer CT-S800 cassette deck, shown with Signet EP700 headphones and cassettes from TDK's newly reformulated line (see page 87). Design by Sue Llewellyn, photo by Robert Butler.

STEREO REVIEW BUYER POLL, SEE PAGE 81
Please fill in if you bought equipment in the past thirty days.
READER SERVICE INFORMATION CARD, FACING PAGE 81
Circle the items you want to know about.



PAGE 87



PAGE 91



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The RIA Series



"They provide smooth, fast and incredibly well detailed sound."

“Polk’s RTA Tower Loudspeakers Combine Legendary Polk Performance with Contemporary Style.”

Big speaker performance with an efficient use of space.

RTA 11t

The RTA 11t is the finest conventional (non-SDA) speaker that Polk Audio manufactures. Its extremely high power handling (250 watts) and high efficiency (90dB) provide remarkable dynamic range from both large and small amplifiers. The RTA 11t utilizes the same technologically advanced fluid-coupled subwoofer design found in Polk’s flagship model. Dual 8” sub-bass radiators are coupled to two 6½” mid-bass drivers, resulting in a fast, powerful, deep, and ultra-accurate bass response, without the boomy, undetailed sound of large woofer systems.

RTA 8t

In a slightly smaller package, the RTA 8t offers the same driver complement as the larger, more expensive RTA 11t, and thus shares its benefits of superior imaging, musicality, and detail.

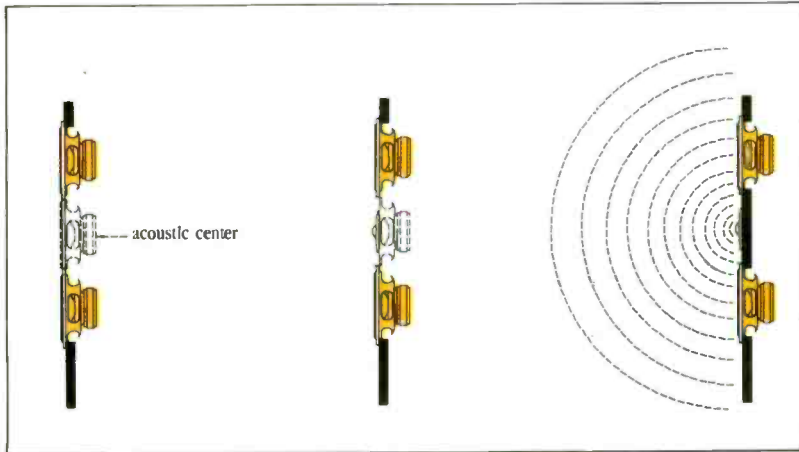
Both Polk RTA series loudspeakers achieve the extremely rare combination of good looks and state-of-the-art performance. The tall, elegantly slender, and deep “tower” design cabinets allow for substantial internal volume for high efficiency and powerful bass, while requiring less than one square foot of floor space. The small baffle surface area around each driver minimizes diffraction (sonic reflections), thereby insuring outstanding imaging and low coloration.

Positioning the 1” silver-coil dome tweeter between the two 6½” trilaminate polymer bass/midrange drivers achieves what is called “coincident radiation.” This means that both the mid- and high-frequencies appear to radiate from the same place on the baffle resulting in perfect blending at the critical crossover point. (See illustration, below).

Polk RTA speakers have an uncanny ability to perfectly reproduce the human voice, pianos, guitars, and every other instrument whose faithful reproduction demands superlative midrange and high-frequency performance. Bass and percussion instruments are accurately reproduced with full visceral power and realism, without the heaviness, boominess, or lack of detail that plague lesser designs.

The discriminating listener who seeks state-of-the-art performance and design will find the quintessential combination of both in Polk’s RTA series loudspeakers.

THE PRINCIPLES OF COINCIDENT RADIATION



The perceived source of sound of two identical drivers is centered in the area between them.

The benefit of coincident waveform propagation resulting in precise imaging, uniform vertical dispersion and startling midrange accuracy.

In the Polk RTA loudspeaker, the tweeter is positioned at the acoustic center of the drivers.



Polk Audio's RTA 8t and RTA 11t High Performance Tower Speakers

polk audio
The Speaker Specialists®

5601 Metro Drive, Baltimore, Md. 21215

Where to buy Polk Speakers? For your nearest dealer, see page 128.

CIRCLE NO. 90 ON READER SERVICE CARD

Finally, a CD player that reproduces all of the music, not just bits and bytes of it.



Adcom's new GCD-575 Compact Disc Player has been worth waiting for. Now there's a CD player with analog audio circuits as advanced as its digital stages. Featuring a no-compromise Class "A" audio section, the GCD-575 is the first affordable CD player that delivers the long anticipated technical benefits of digital

sound. So visit your authorized Adcom dealer and listen to all of the music... not just bits and bytes of it.

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CIRCLE NO 60 ON READER SERVICE CARD

by Christie Barter
and Rebecca Day

SHOW NEWS

The 1989 International Winter Consumer Electronics Show in Las Vegas marked the beginning of a year-long celebration of the fiftieth anniversary of television broadcasts in the United States. Among the most dramatic displays at the show was an audio/video demonstration of high-definition television featuring Barco Electronics projection systems with Fosgate surround-sound equipment.

Nakamichi made news with the introduction of the Model 1000 digital audio tape (DAT) recording system. In addition to 48- and 32-khz capability, the Model 1000 will permit recording at a sampling frequency of 44.1 khz, which makes possible direct digital copying of compact discs. Price: about \$10,000.

Sony demonstrated new integrated circuits for digital signal processing, which will be incorporated in a range of future Sony hi-fi products. At the leading edge of infrared technology, Koss introduced an improved version of its cordless headphones.

A surprising number of exciting new speakers were introduced in every price range by such manufacturers as Allison, Altec Lansing, Celestion, Focus, Pioneer, Polk, Sumo, and Yamaha. Especially notable were Sumo's new planar speakers (\$3,000 a pair) and Pioneer's TZ series of speakers made in America to complement Pioneer's Elite line of electronics. Prices are \$1,800 a pair for the TZ-7's and \$4,000 a pair for the TZ-9's.

When the final figures are in, the consumer electronics industry's 1988 sales are expected to total \$30 billion. Experts at Winter CES confidently predicted 5 percent growth for 1989.

FOR THE ROAD

Lexus, Toyota's new luxury division, will offer a factory-installed Nakamichi audio system as an option in its top-of-the-line, V8-powered LS 400 sedan,

scheduled to go on sale this fall.

... A new bi-amplified speaker system is employed in the Ford/JBL stereo system offered in 1989 Ford Thunderbirds and Mercury Cougars. An AM/FM cassette receiver is standard with the system, and a CD player is available as an option. ... Delco/Bose Gold Series sound systems—consisting of a receiver, a cassette deck or CD player, and four speakers—are standard in the 1989 Cadillac Seville, Eldorado, and DeVille/Fleetwoods. A console DAT player is optional.

MUSIC NOTES

Michael Jackson's full-length *Moonwalker* film, shown as a theatrical feature in Europe, Latin America, and Japan, has gone straight to home video in the U.S. Both the videocassette and the videodisc are encoded for Dolby Surround. ... RCA's *Dirty Dancing* soundtrack is the first album since Bruce Springsteen's *Born in the U.S.A.* to be certified by the Recording Industry Association of America for U.S. sales of ten million copies. ... RCA Red Seal has just released a live recording of the "Musicians for Armenia" concert given in London late last year by pianist Barry Douglas, flutist James Galway, violinist Cho-Liang Lin, cellist Mstislav Rostropovich, and others. Proceeds go to the British Red Cross Armenian Earthquake Appeal. ... Mobil Oil and Tandy/Radio Shack will co-sponsor radio and TV coverage of the Van Cliburn Piano Competition in Fort Worth, May 27 through June 11.

MOVING MARKETS

European loudspeaker manufacturer Tannoy has re-entered the North American market with a line of eighteen speaker systems. Featuring the sixty-two-year-old company's dual-concentric driver technology, the speakers range in price from \$300 to \$10,000 a pair.

Akai products have been pulled from the U.S. market by parent company Mitsubishi, which cited production shortages and the fall

of the dollar against the yen.

Mitsubishi will honor Akai warranties and supply replacement parts for seven years through its U.S. service centers. Akai products will continue to be sold in Japan and Europe.

RECORDABLE CD'S

The manufacturer of Triad tape cassettes, Taiyo Yuden of Japan, has demonstrated recordable blank CD's. The discs, which can be recorded only once, are scheduled for introduction later this year, but for professional use only. The company has stressed that it will not market recordable CD's to consumers in the U.S. until copyright issues are resolved. Taiyo Yuden products were formerly distributed in the U.S. by Harman America, but they will now be marketed directly by the manufacturer.

BIG DEALS

Britain's Thorn-EMI is buying the rights to some 250,000 song titles from the U.S. group SBK Entertainment World for \$336 million. The catalog includes *Over the Rainbow* and the *Pink Panther* theme as well as songs by such artists as Marvin Gaye and Tracy Chapman.

CBS Records has bought a leading country-music publisher, Tree International, for more than \$30 million. Tree's catalog of 35,000 songs includes Elvis Presley's *Heartbreak Hotel*, Roger Miller's *King of the Road*, and country favorites by Willie Nelson, Merle Haggard, and Buck Owens.



TERRY AULEN

The Brains.

Carver's new CT-Seven Remote Control Preamplifier/Tuner with Asymmetrical Charge Coupled FM Detection and Sonic Holography.



The Brawn.

Your choice of four high power advanced Magnetic Field amplifier designs.



POWERFUL

Distributed in Canada by: *evolution* technology

Power and finesse. They've always been important factors in a serious listening system. Now there's a new way to achieve both without overpowering your budget.

Our new CT-Seven preamplifier/tuner combines a Sonic Holography® preamplifier and Asymmetrical Charge-Coupled FM Detection tuner into one convenient component.

It makes beautiful music with our whole line of Magnetic Field Power amplifiers. Including the new M-4.0t with the same transfer function and power output as Bob Carver's \$17,500-pr. ultra-esoteric Silver Seven monoblock amplifiers.

The CT-Seven as an audiophile preamplifier: Like Carver's fine separate preamplifiers, the CT-Seven is designed as a "straight wire with gain," capable of perfectly passing input signals without adding or subtracting any musical nuances.

It includes a meticulously engineered, ultra-low noise phono stage that flawlessly duplicates the theoretical RIAA equalization curve.

The CT-Seven as a complete sound control center: From the comfort of your listening chair you can choose from six sound sources including dual tape monitors, CD input and video/auxiliary inputs (suitable for video sound or DAT). Unlike most remote volume adjustments which use distortion-inducing electronics, the CT-Seven employs a motorized volume control for smooth control and smoother sound quality. Also included are useful 3-band tone controls, mono switch, loudness equalization and a studio-quality headphone amplifier.



The CT-Seven as your passport to musical reality: The CT's Sonic Holography® Generator is capable of redefining your perception of music by recreating the sound stage and 3-dimensional spatial characteristics of a live performance. According to some of America's top reviewers, Sonic Holography® "...seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers. The effect strains credibility."

And you can create it from any stereo record, tape CD or even FM broadcast. With your existing speakers. At the touch of a remote button.

The CT-Seven as a high performance quartz synthesized FM tuner: You've simply never heard FM until you've heard it through the Carver Asymmetrical Charge-Coupled FM Detector circuit. Multipath distortion, interference and distant station noise are dramatically reduced. Weak stations emerge into dramatic clarity. Yet stereo separation, space, depth, and ambience were not only retained, but seemingly enhanced by the lack of background noise.

Choose 8 FM and 8 AM presets by remote control. Scan the broadcast band automatically or manually. With the CT-Seven's ACCD circuit on, you'll discover "new" stations which were previously unlistenable!

The CT-Seven's power partners: Only Carver gives you four high power amplifier choices from 140 watts to 375 watts per channel. Each is perfectly matched to the CT-Seven. And each uses Carver's cool-running Magnetic Field Technology which dispenses with bulky power supplies and power-wasting external heat sinks... yet which is so rugged it's used in the world's largest touring professional sound systems.

Choose from the new "modestly-powered" M-0.5t (140 watts per channel RMS 20-20kHz both channels driven into 8 ohms with less than 0.1% THD), the M-1.0t (200 watts/ch. per channel RMS 20-20kHz both channels driven into 8 ohms with less than 0.15% THD), M-500t (250 watts per channel RMS 20-20kHz both channels driven into 8 ohms with less than 0.15% THD), or the new M-4.0t (375 watts per channel RMS 20-20kHz both channels driven into 8 ohms with less than 0.5% THD).

Hear brains and brawn together at your Carver dealer: Switch the CT-Seven and the most expensive tuner in the room to hear Asymmetrical Charge-Coupled FM Detection work its magic. Put on your favorite CD, press the CT-Seven's Sonic Holography® remote button and feel the sound room "disappear." Turn up the volume to live performance levels and discover the impact of true dynamic headroom.

And then get ready for another pleasant experience when you discover what a super value the CT-Seven and Carver power amplifiers are.

For more information or the dealer nearest you, call 1-800-443-CAVR

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ACCURATE

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LETTERS

P.P. and "Peep Show"

In regard to Parke Puterbaugh's January review of "Peep Show" by Siouxsie and the Banshees—does Mr. Puterbaugh actually get paid for this? My poor thesaurus has a headache! I never realized how many adjectives one person could utilize in a single phrase.

ROGER SCHOLTEN

Chicago, IL

I have been a subscriber to STEREO REVIEW for over four years, reading every issue cover to cover. Parke Puterbaugh's review of "Peep Show" in the January issue is the best piece of writing you have published in that time. What I want to know is, where did Mr. Puterbaugh study rhetoric?

JAMES HALLEMANN

Royal Oak, MI

Cassette Deck Features

Why is it that today's cassette decks don't have microphone inputs? Just a few years ago, if you bought a cassette deck you got two microphone jacks on the front panel just as sure as you got an on/off switch. Today they're as rare as windwings on cars. It seems the only decks that have mike inputs are either the off-brand ones or the very bottom-of-the-line models.

W. B. RHODES

San Francisco, CA

There are no two cassette decks in the world whose head azimuth alignment will match perfectly, and the quality of the sound varies considerably from deck to deck as a result. Unless you play a tape only on the deck that recorded it, you need to have a separately adjusted deck for every tape you borrow or buy.

Head azimuth is as important today as the focusing ability of camera lenses. It really is the *focus* of sound. And yet manufacturers make high-priced decks with all kinds of selling features except the most important one: user-adjustable or auto-adjusting azimuth. Only Nakamichi's Dragon has automatic azimuth adjustment, and only its CR-7A has convenient manual adjustment. It's about time all cassette-deck manufacturers paid attention to this issue.

ANTHONY HUDAVERDI

Santa Monica, CA

Quite a few manufacturers offer one or more models with mike inputs—including a/d/s/. JVC, Luxman, Onkyo, Philips, Sony, and Yamaha, among others—and they are by no means all bottom-of-the-line models. As for azimuth adjustment, several other manufacturers, including SAE, Tandberg, and Uher, make user-adjustable decks.

Looking for CD's

After reading Glen Bartholomew's comments in January "Letters," I realize that I am not alone in feeling frustrated when it comes to finding lesser-known music on CD. I've recently journeyed into the wonderful world of contemporary blues, reggae, and r-&-b. If you take a stroll through a typical record store looking for something in those categories, not only do you find a scant selection in LP form, but CD's are even more scarce.

It's all fine and well that the RIAA says CD's outsold LP's by 26.9 million copies in the first half of 1988, but how many millions of those CD's were by mainstream pop artists like Michael Jackson, U2, and George Michael?

DENEYSE ALEXANDER

Grover City, CA

In a letter to STEREO REVIEW that was published in January, I expressed some concern about my inability to get hold of rhythm-and-blues CD's in record stores. I also said that at just about every record store I've been to (not every one in the country), vinyl seems as popular as ever.

Your reply quoted RIAA statistics on relative sales of CD's and LP's, but you did not give a breakdown by music category. The 70.4 million CD's sold might just as well be polka music.

GLEN C. BARTHOLOMEW

Brooklyn, NY

I would like to inform my fellow New Yorker Glen Bartholomew that if he has a problem finding r-&-b CD's, it's because he hasn't been looking hard enough. I've found a substantial number of r-&-b CD's, even some of recordings from the early Seventies.

STEVEN RAMOS

Bayside, NY

Unfortunately, neither the RIAA nor anyone else can provide a national breakdown of CD sales by category. Ms. Alexander is probably correct in assuming that the vast majority of CD's sold are of records by "mainstream pop artists." We quoted the RIAA statistics only in response to Mr. Bartholomew's suggestion that "vinyl seems as popular as ever," which is demonstrably false overall even if some categories are better represented than others in CD sales.

Car Stereo Show-Offs

I am outraged at the Jensen ad on page 4 of the January issue ["Jensen shatters," for car speakers]. How can they encourage this type of childish behavior? With sound that loud, the driver most certainly cannot be concen-

The Ford JBL Audio System for Taurus

Crystal-clear highs. Deep resonant basses. Music the way it should sound. With every tone reproduced in rich, full detail. In the extraordinary system that set a whole new standard for automotive sound.

Developed in America by Ford, one of the largest car audio manufacturers in the world, and JBL, the leader in professional recording

studio loudspeakers. Delivering the high performance you've been looking for.

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AUDIO SYSTEMS
The sound of quality

RHAPSODY
ON THE
ROAD



DISCS, DISCS, DISCS!



Cocktail—Original Soundtrack (Elektra) 373779
 Portrait of Wynton Marsalis (CBS Master) 373555
 The Movies Go To The Opera—Various Artists (Angel) 372342

Kenny G—Silhouette (Arista) 371559

Steve Winwood—Roll With It (Virgin) 371211
 Guns N' Roses—Appetite For Destruction (Geffen) 359984

CDs FOR ONLY A PENNY

plus shipping/handling with membership
 Details below.

Sugar Cubes—Life's Too Good (Elektra) 372896

Metallica—And Justice For All (Elektra) 372805

Bobby McFerrin—Simple Pleasures (EMI) 369306

Randy Travis—Old 8 x 10 (Warner Bros.) 370643

Big Audio Dynamite—Tighten Up, Vol. 1 '88 (Columbia) 372672

Willie Nelson—What A Wonderful World (Columbia) 372128

Classic Rock from the Fifties, Sixties and Seventies

Santana—Greatest Hits (Columbia) 244459

Carl Perkins—Original Sun Greatest Hits (Rhino) 374199

Roy Orbison—His All Time Hits Vol. 1 (Monument) 374082

Various Artists—Sun Story (Rhino) 374074

Grateful Dead—Europe 72 (Warner Bros.) 370064-390062

Bob Dylan—Blonde On Blonde (Columbia) 369942

Jerry Lee Lewis—18 Original Sun Greatest Hits (Rhino) 369108

The Turtles—20 Greatest Hits (Rhino) 369090

Best of Ritchie Valens (Rhino) 369032

Dion and The Belmonts—Their Best (Laurie) 369074

Jethro Tull—Thick As A Brick (Chrysalis) 367136

The Drifters—Golden Hits (Atlantic) 365841

Traffic—John Barleycorn Must Die (Island) 364935

Jackson Browne—The Pretender (Asylum) 292243

Supertramp—Classics Vol. 9 (A&M) 364471

Jimi Hendrix—The Cry Of Love (Reprise) 363556

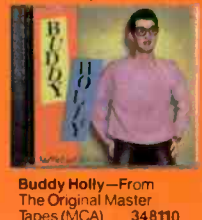
Stevie Wonder—Innervisions (Tamia) 362368

The Who—Who's Next (MCA) 357277

Yes—Fragile (Atlantic) 351957

Aretha Franklin—30 Greatest Hits (Atlantic) 350793-390799

Rolling Stones—Sticky Fingers (Rolling Stones Rec.) 350645



Led Zeppelin IV (Atlantic) 291435

The Mamas & The Papas—16 Of Their Greatest Hits (MCA) 348623

Best Of The Monkees—Then And Now (Arista) 346536



The Doors—The Best Of The Doors (Elektra) 357616-367612

Boston (Epic) 269209

Diana Ross & The Supremes—25th Anniversary Album (Motown) 345454-395459

Chuck Berry—The Great Twenty-Eight (Chess) 343657

Sly & The Family Stone—Greatest Hits (Epic) 196246

Lynyrd Skynyrd Band—Gold & Platinum (MCA) 307447-397448

Led Zeppelin—Houses Of The Holy (Atlantic) 293597



The Beach Boys—Made In U.S.A. (Capitol) 346445

Eagles—Greatest Hits 1971-1975 (Asylum) 287003

A Decade Of Steely Dan (MCA) 341073

Best Of Kansas* (CBS Assoc.) 327742

Motown's 25 #1 Hits (Motown) 319996-399996

Blood, Sweat & Tears—Greatest Hits (Columbia) 214650

Woodstock—Orig. Soundtrack (Atlantic) 291864-391862

Emerson, Lake & Palmer—Brain Salad Surgery (Atlantic) 291526

America—Greatest Hits (Warner Bros.) 291385

James Taylor—Greatest Hits (Warner Bros.) 291302

The Steve Miller Band—Greatest Hits 1974-78 (Capitol) 290171



Creedence Clearwater Revival—The 20 Greatest Hits (Fantasy) 308049

Janis Joplin—Greatest Hits (Columbia) 231670

Fleetwood Mac—Rumours (Warner Bros.) 286914

Linda Ronstadt—Greatest Hits (Asylum) 286740

Meat Loaf—Bat Out Of Hell (Epic) 279133

Billy Joel—The Stranger (Columbia) 277491

Best Of The Band (Capitol) 269365

Peter Dinklage—Frampton Comes Alive! (A&M) 262311-392316

Chicago* IX—Greatest Hits (Columbia) 260638

Bruce Springsteen—Born To Run (Columbia) 257279

Cat Stevens—Greatest Hits (A&M) 256560

Jim Croce—Photographs & Memories: His Greatest Hits (Saja) 246868

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LETTERS

trating on the road! Nor is there any mention of ear damage or of disturbing one's neighbors. If I can hear it outside of the vehicle, it is too loud! Besides, bass that loud is unnatural, a distortion. It is not high fidelity; it is merely absurd.

E. BUELL
Los Angeles, CA

CD Player Listening Tests

Ken C. Pohlmann's "Six Top CD Players: Can You Hear the Difference?" in December was interesting, but as a report of supposedly scientific research it was flawed.

Although Pohlmann and his listening panel used the widely accepted ABX comparator system, the listeners were aware at any given time which CD players they were comparing. Many would therefore argue that the test was *not* a bona fide double-blind one.

Moreover, even if one accepts the figures produced, Mr. Pohlmann's conclusions are questionable. He says, "With a fade-to-silence test tone, all listeners were able to hear significant differences.

... With dynamically variable music ... our statistics suggest ... critical listeners can hear differences, but only some of the time and only under carefully controlled conditions." No argument so far, but then there is something of a leap in logic when he says that "Listeners who still feel compelled to voice equipment preferences apparently have the weight of double-blind listening tests to back them up."

Wow! It would have been more to the point had he said something like: "Therefore, under almost any practical, real-world circumstances, listeners would have no audio-related basis for preferring one of the tested CD players over another. That leaves such considerations as appearance, price, convenience features, durability, and ease of operation as rational criteria for selection or rejection."

KLAUS HALM
East Point, GA

The listening tests on high-end CD players showed convincingly that differences in sound can be perceived, but the report suffered from the common fail-

ing of trying to read more into the responses than was valid. The test facility obviously worked well in revealing differences between players, but it was not adequate for making judgments on their relative quality. The "better" players may simply have been compensating for the characteristics of one model of speaker operating in a highly damped room.

Older readers will recall the practice of selecting a cartridge to offset the deficiencies of a speaker—a "bright" cartridge with a "dull" speaker, for example—and the same thing may have occurred, on a more subtle level, in these listening tests. If any quality evaluations were going to be reported, the comparisons should have been repeated with another brand of speaker and with some of the fiberglass baffling removed. Showing that A is not identical with B is different from showing which is better.

My guess is that an expanded listening regimen would have blurred the differences.

CHARLES W. SIMONS
South Dennis, MA



LETTERS

Ken Pohlmann replies: In answer to Mr. Halm, the test was indeed double blind. It attempted to ascertain whether a difference between two sources existed; knowledge of the source pairs is immaterial. Moreover, Mr. Halm is certainly free to disagree with my conclusions regarding the relevance of subjective responses. I merely followed the comments of those who actually participated in the test and tried to be neutral.

Mr. Simons is certainly correct in pointing out that all conclusions are valid only under testing conditions. Different loudspeakers, for example, may cause listeners to favor different players. Of course, the basic intent of the test, to show whether audible differences exist, is not affected by the choice of reproduction equipment, as long as it does not impede the ability to hear differences.

The Sony Shuffle

As a recent purchaser of a Sony CDP-C70 compact disc changer, I was taken aback to discover that it would repeat selections in the multidisc shuffle-play mode instead of removing them after an

initial play. Sony's district service office assured me that the unit was defective, and I took it in for repair. It had been in the shop five days when I received the December STEREO REVIEW, which contains a letter from reader R. B. Ormsby stating that the repeats in the shuffle mode are normal.

I called Sony and the repair shop again, and both assured me that this was abnormal behavior. A recent service bulletin from Sony outlined repairs to correct the problem.

JOHN H. BERRY, JR.
Hastings, MI

First Issues

I was twenty-two when I bought the first copy of your magazine in February 1958. It was indeed your first issue, then called *HiFi and Music Review*. From that day on, I have never missed an issue. Most of my life I have never subscribed to another magazine. That shows you the importance your publication has had to my life. It has guided me through thirty years of, first, a hobby with hi-fi, then a passion for music.

Fine music well reproduced in my home is as necessary to me as food and warmth. Thank you for the influence you have had on my life and for the issues that I am yet to enjoy.

For the sake of space, the time has come for me to part with my complete collection of STEREO REVIEW. I don't have the heart to trash it. Do you have any other alternatives?

REX E. BILLS
Portland, OR

STEREO REVIEW's own office sets are pretty space-consuming, too, and we really don't have room for another. If you would like to give Mr. Bills's collection a new home, please write to him at P.O. Box 25215, Portland, OR 97225.

Correction

On page 52 of the February issue we misidentified a picture of the Onkyo Grand Integra M-510 power amplifier as the M-508. The M-510 is rated for 300 watts per channel and lists for \$4,500. We regret any confusion the error may have caused. □

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It's the same excitement I felt when I got my first set of wheels. Only this time it's not a new car.

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NEW PRODUCTS

Nakamichi

The Nakamichi CDP-2 ("2A" in the U.S. and Canada) compact disc player uses the company's multiregulated power supply with isolated-ground topology, quadruple-oversampling digital filters, and a three-pole, linear-phase analog output filter. Its "glitch-free" digital-to-analog converters are said to prevent noise generation during the conversion process. Features include one-touch programming, memory call, dual-speed cueing, repeat play, and a twenty-four-key wireless remote control. Price: \$529. Nakamichi America, Dept. SR, 19701 S. Vermont Ave., Torrance, CA 90502.

Circle 120 on reader service card



Parasound

The Parasound P/FET-900 is a fully discrete-component preamplifier that uses sixty-six low-noise power transistors in Class A mode, field-effect transistors in the phono and line stages, and CMOS logic switching modules. Other features include a variable loudness control, tone defeat, selectable mono mode, and tone controls that hinge at

85 and 12,000 Hz instead of the more common 100 and 10,000 Hz. There are connections for two tape decks with dubbing in either direction independently of the selected program source. All jacks are gold-plated. Price: \$395. Parasound Products, Dept. SR, 950 Battery St., San Francisco, CA 94111.

Circle 121 on reader service card



Technics

The Technics SL-P999 CD player uses 20-bit resolution and eight-times oversampling. It has four digital-to-analog converters, two for each channel, and uses Class AA circuitry to improve both linearity and fidelity. The error-correction system will interpolate missing data values even when there are up to eight consecutive dropouts. Features include Peak-Level Search, which finds and repeats a 6-second segment con-

taining the highest output peak so the user can set precise recording levels; Edit Guide, which calculates which tracks on a CD will best fit on a standard tape length; random play; and shuttle search. There is an optical digital output, and a forty-three-function remote control is included. Price: \$599.95. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

Circle 122 on reader service card



New England Audio Resource

The AES-2 is a two-way speaker system from New England Audio Resource (NEAR) that is said to be waterproof and therefore suited for year-round outdoor use. The 8-inch woofer and 2-inch midrange/tweeter have aluminum cones and neoprene-rubber edge surrounds. The speaker cabinet has a die-cast aluminum frame and a fiberglass-laminated finish. Recommended amplifier power is 25 to 150 watts per channel. Dimensions are 20 inches high, 13 inches wide, and 12 inches deep at the bottom, 5 inches deep at the top. Price: \$580 a pair. New England Audio Resource, Dept. SR, 1450 Hanover Ave., Meridian, CT 06450.

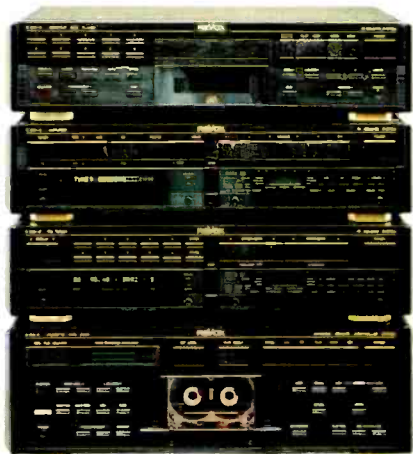
Circle 123 on reader service card

NEW PRODUCTS

Revox

The Revox B200-S series includes (top to bottom in photo) the B226-S CD player, the B250-S integrated amplifier, the B260-S tuner, and the B215-S cassette deck. The CD player features 16-bit resolution, quadruple oversampling, a headphone amplifier, and digital outputs. The amplifier is rated to deliver 150 watts per channel into 4 ohms and has six inputs with independently adjustable levels, selectable output limiting for two pairs of speakers, and simultaneous preamp and power-amp outputs for use in multiroom installations. The tuner has sixty FM presets that can be divided into ten subgroups for scanning, selectable antenna inputs, and six filters in the IF circuitry to improve selectivity. The cassette deck can store bias settings for six different tape formulations and has Dolby B, Dolby C, and Dolby HX Pro. Prices: B226-S, \$1,895; B250-S, \$2,500; B260-S, \$2,500; and B215-S, \$2,800. Studer Revox America, Dept. SR, 1425 Elm Hill Pike, Nashville, TN 37210.

Circle 124 on reader service card



Proton

Built for Proton by Apex Systems, the SD-1000 logic-steering surround-sound decoder is said to provide separation of at least 40 dB between any two adjacent channels, 58 dB between opposite channels. The Dolby-compatible decoder can be used with as few as three speakers or as many as six, plus a subwoofer. A Dialogue Scatter Reduction feature is said to reduce improper routing of sibilance with poorly recorded

material. Three mode settings—Cinema, Music, and Stereo Bypass—tailor the decoding process to the source material. Frequency response is rated as 12 to 85,000 Hz \pm 1 dB, signal-to-noise ratio as 80 dB, and dynamic range as 100.5 dB. Most controls are on the supplied remote unit only. Price: \$999. Proton Corp., Dept. SR, 737 W. Artesia Blvd., Compton, CA 90220.

Circle 126 on reader service card



NEC

The CD-830DS compact disc player, part of NEC's Renaissance line, features sixteen-times oversampling and two digital-to-analog converters for each channel. The dual converters are said to eliminate phase shift and reduce crosstalk. Other features include programming for up to twenty-four tracks, vari-

able-length intro scan (1 to 60 seconds), and either track or phrase repeat. Besides the analog output, the CD-830DS has both optical and coaxial digital outputs. Price: \$999. NEC Home Electronics, Dept. SR, 1255 Michael Dr., Wood Dale, IL 60191.

Circle 127 on reader service card

Soundcraftsmen

The Soundcraftsmen Pro-Power One power amplifier is rated to deliver 205 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.05 percent total harmonic distortion. Into 4 ohms, the rating is 300 watts per channel. It uses MOSFET amplification stages and no current limiting. Clipping indicators for each channel are triggered when waveform distortion is detected, but the amplifier will continue to operate even under low-impedance conditions. Price: \$579. Soundcraftsmen, Dept. SR, 2200 S. Ritchey, Santa Ana, CA 92705.

Circle 125 on reader service card



"Nothing Compares"

—Audio Magazine

To get the ultimate bass, you need the finest subwoofer: Velodyne.[™] Our advanced High Gain Servo (HGS) technology creates deep bass with incredibly low distortion and high output.

Here's what the people who listen for a living say:

“It's a cliché these days to say that something is awesome, but it's certainly an apt term here . . .

The ULD-15[™] is just hitting stride at frequencies where standard speakers are beginning to run out of steam, which is just what you want a subwoofer to do.

The average distortion throughout the system's working range to above 100Hz stays below 1/2 percent until the output reaches about 95db SPL (sound pressure level), which is already better than most full-range speakers can manage. Even at 100 db SPL, the ULD-15 averages less than 1 percent total harmonic distortion (THD). This is an outstanding achievement.

Though the satellites we used aren't fairly described as sow's ears, the silk-purse sound we heard with the added ULD-15 was a revelation. ●●

*High Fidelity

“The Velodyne subwoofer is one of those rare components I can recommend to almost anyone . . .

The Velodyne Subwoofer is the most interesting product I have reviewed to date. When asked about 20 Hz bass response and distortion, audiophiles traditionally mumble something about “no musical information below such and such” and change the subject. The craftsmen who built church organs in centuries past did not agree with this opinion, and they provided pipes with output down to 16Hz. Velodyne recognized the problem of reproducing low bass and engineered a solution. This feat required multi-disciplinary ability, intuition, craftsmanship, organization of priorities, and common sense. I rank the quality, if not the magnitude, of this small California company's achievement up there with Dolby noise reduction and the Compact Disc. ●●

David L. Clark
**Audio Magazine

“Impressive as the specifications and measurements for the Velodyne ULD-12[™] are, they are overshadowed by its performance in a music system . . .

We had expected to find a major improvement when using the ULD-12 with smaller speakers, ones whose lower limit was perhaps 45 to 60Hz. What we did not expect was the tremendous improvement it provided even with the largest, most bass-potent systems at our disposal, which went down to 30 or 35Hz without external help. Possibly the very low distortion of the Velodyne system was responsible for the improved bass we heard, or perhaps the fact that its output could be boosted above normal woofer levels, compensating for their natural rolloff at the lowest frequencies. Whatever the explanation, we are convinced that there are very few speakers whose low-bass performance could not be improved by adding a ULD-12 to the system.

It is an attractive, compact, intelligently designed product. And be warned—it can be habit forming! ●●

Julian Hirsch
***Stereo Review

If you want true bass—bass with power, depth, and clarity, you want a Velodyne. And that's the bottom line.

Velodyne

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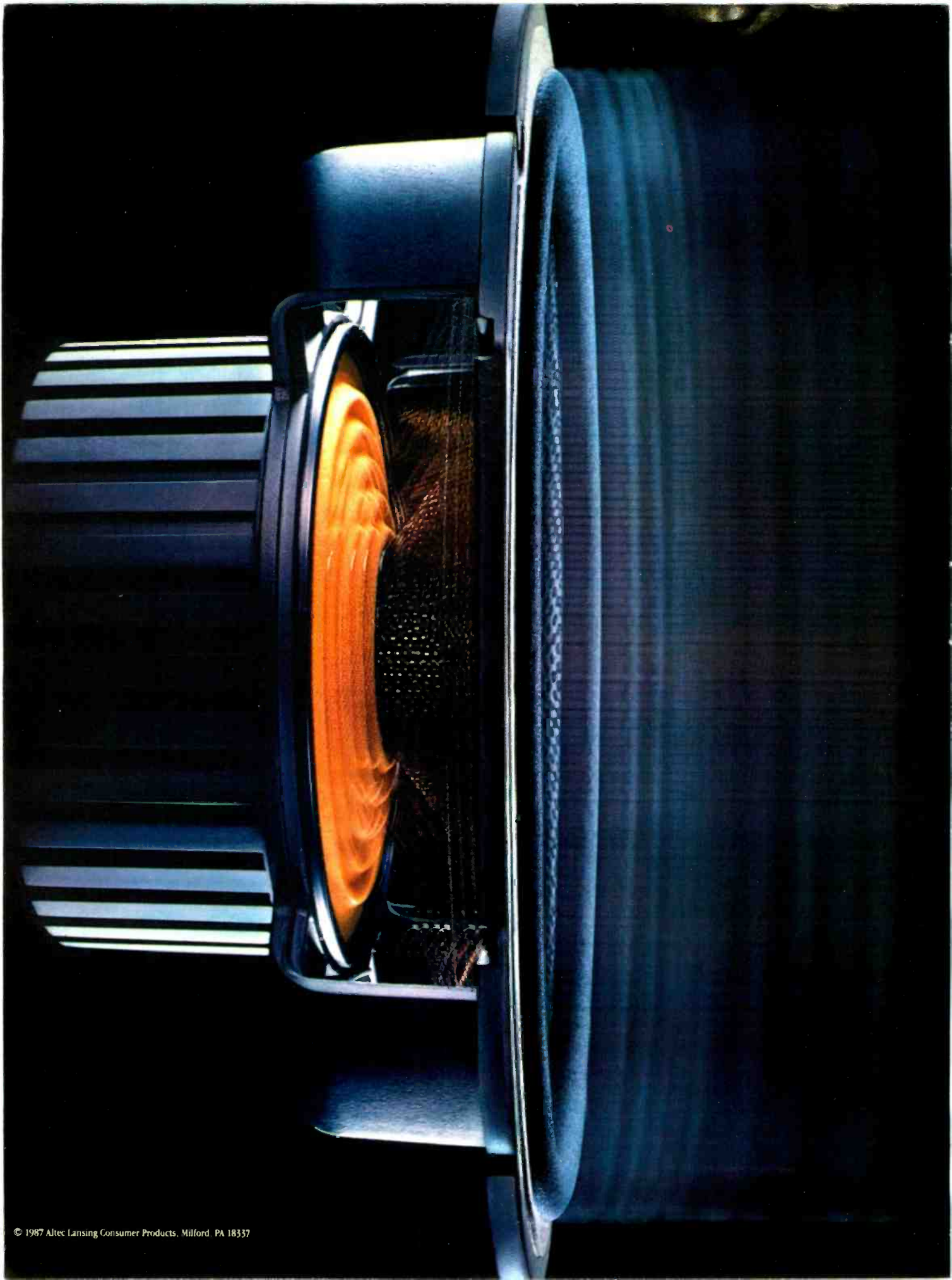
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CIRCLE NO. 80 ON READER SERVICE CARD

NEW PRODUCTS



Scosche Industries

The Scosche PDS-1 Portable Disc Shuttle is a table-type tray that mounts a portable CD player under a car's dashboard. The adjustable suspension system is said to prevent skipping or mistracking even with rough road conditions. The PDS-1 is constructed of automotive-grade injection-molded ABS plastic and die-cast aluminum. It uses a swivel mount, and a universal mount is included. Price: \$29.95. Scosche Industries, Dept. SR, 5160 Gabbert Rd., Moorpark, CA 93021.

Circle 128 on reader service card



Sharp

The JC-568 is Sharp's top-of-the-line personal stereo. It has digital-synthesis tuning, five FM and five AM presets, Dolby B, and autoreverse. A three-band graphic equalizer is built in, and a pair of collapsible stereo headphones is included. Price: \$139.95. Sharp Electronics Corp., Dept. SR, Sharp Plaza, Mahwah, NJ 07430-2135.

Circle 129 on reader service card

Philips

Philips's first CD-video combi-player, the CDV488, can play conventional CD's, 3-inch CD's, CD-V's, double-sided 8- and 12-inch videodiscs, and the new 8-inch single-sided videodiscs. The player has a 16-bit, quadruple-oversampling digital filter and dual 16-bit digital-to-analog converters. Features include favorite track selection, twenty-track/chapter programming, optical and electrical digital audio outputs, and

CX noise reduction for analog recorded sound. There is a direct video output as well as an S-type output for use with a Super VHS-capable monitor. Included is a universal programmable remote control that can operate up to ten components. Price: \$1,300. Philips Consumer Electronics, Dept. SR, One Philips Dr., P.O. Box 14810, Knoxville, TN 37914.

Circle 130 on reader service card



Tandberg

Tandberg's Model 3031A FM tuner, shown here (bottom) with the 3036A power amplifier and 3038A preamplifier, can store up to sixteen stations in memory and has both manual and automatic tuning. Dual-gate MOSFET's are used in the RF stages for good linearity, low noise, and wide dynamic range. Four tuned IF circuits are said to pre-

vent mirror-image interference and other out-of-band distortion. The stereo 50-dB quieting sensitivity is rated as 20 μ V, frequency response as 30 to 15,000 Hz \pm 0.5 dB, adjacent-channel selectivity as 14 dB, and capture ratio as 0.9 dB. Price: \$1,200. Tandberg of America, 122 Dupont St., Plainview, NY 11803.

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What started one day as a passionate desire to produce the world's best loudspeaker ended four years later when Energy passed its final gruelling test.

The rest is history.

The success attained by Energy was driven by care. By never accepting *very good*, but holding out for *perfect*.

For the last six years, Energy has complemented the sound systems of thousands of very particular audiophiles throughout the world. We'd like to thank them for their confidence.

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U2: Rattle & Hum • New live set includes the hit *Desire*. Still Haven't Found What I'm Looking For, more. Island 200596

Anita Baker: Rapture • Sweet Love, Caught Up In The Rapture, You Bring Me Joy, Been So Long, Mystery, more. Elektra 173404

Itzhak Perlman: French Violin Showpieces • Carmen Fantasy, Tzigane, Poeme, Havanaise, more. DG DIGITAL 115457

Tracy Chapman • Extraordinary singer/songwriter with hit *Fast Car*, *Talkin' Bout A Revolution*, *Baby Can I Hold You*, *Mountains O' Things*, *Why?*, etc. Elektra 153582

Guns N' Roses: Appetite For Destruction Welcome To The Jungle, Sweet Child O' Mine, It's So Easy, more. Geffen 170348

Jerry Lee Lewis: Original Sun Greatest Hits • Whole Lotta Shakin' Goin On, Great Balls Of Fire, more. Rhino 154118

Kitaro: The Light Of The Spirit • Sundance, Mysterious Encounter, The Field, In The Beginning, etc. Geffen DIGITAL 164228

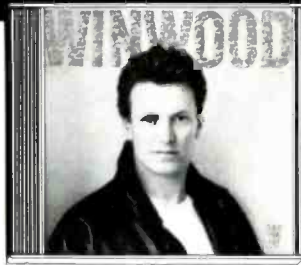
Richard Marx • Endless Summer Nights, Should've Known Better, Don't Mean Nothing, etc. EMI-Manhattan 134073

Jimmy Page: Outrider • Wasting My Time, The Only One, Prison Blues, more. Geffen 123721

Robert Plant: Now And Zen • Dance On My Own, Heaven Knows, Tall Cool One, Ship Of Fools, etc. Es Paranza 134392

Led Zeppelin: Houses Of The Holy Dyer Mak'er, Over The Hills And Far Away, etc. Atlantic 134321

George Harrison: Cloud Nine • Title song, I Got My Mind Set On You, When We Was Fab, more. Warner/Dark Horse 174328



Steve Winwood: Roll With It 154633

Liz Story: Speechless • Forgiveness, Speechless, Welcome Home, Back Porch, Vigil, Frog Park, more. RCA/Novus 100494

Decade/Best Of Steely Dan MCA 154135

Beethoven: Symphony No. 7: Coriolan & Prometheus Overtures • Royal Philharmonic/Previn. RCA DIGITAL 153621

Jethro Tull: Aqualung Chrysalis 124705

Whitney Houston: Whitney • I Wanna Dance With Somebody (Who Loves Me), Didn't We Almost Have It All, more. Arista 152854

Metallica: ...And Justice For All • One, Blackened, title song, To Live Is To Die, Shortest Straw, more. Elektra 200478

Talking Heads: Naked • (Nothing But) Flowers, Mr. Jones, Totally Nude, Blind, The Democratic Circus, The Facts Of Life, etc. Fly/Sire DIGITAL 153810

David Sanborn: Close-Up • Lush jazz sax effort! Slam, You Are Everything, J.T., Goodbye, Same Girl, etc. Warner Bros. 134408

Dwight Yoakam: Buenas Noches From A Lonely Room • Title song, Streets Of Bakersfield (with Buck Owens), more. Reprise 100009

The Best Of The Band Capitol 134485

Classic Old & Gold, Vol. 1 • 20 hits! A Little Bit Of Soul, He's So Fine, A Teenager In Love, Sweet Talkin' Guy, etc. Laurie 134627

INXS: Kick • Need You Tonight, Devil Inside, New Sensation, title song, Never Tear Us Apart, The Loved One, Wild Life, etc. Atlantic DIGITAL 153606

The Glenn Miller Orchestra: In The Digital Mood • In The Mood, Chattanooga Choo Choo, more. GRP DIGITAL 143293

Tangerine Dream: Phaedra 100510

Steve Winwood: Chronicles • Higher Love, Valerie, While You See A Chance, My Love's Leavin', Talking Back To The Night, more. Island 134501

Pictures At An Exhibition, Night On The Bare Mountain, more • Montreal Symphony/Dutoit. London DIGITAL 125314

Whitesnake • Here I Go Again, Still Of The Night, Give Me All Your Love, Crying In The Rain, Bad Boys, more. Geffen 163629

ZZ Top: Afterburner Warner Bros. 164042

Carly Simon: Greatest Hits Live Anticipation, You're So Vain, Coming Around Again, Nobody Does It Better, etc. Arista 154537

Huey Lewis: Small World • Perfect World, Walking With The Kid, World To Me, Better Be True, Old Antone's, etc. Chrysalis 134347



Horowitz Plays Mozart 115436

Najee: Day By Day • Personality, title song, That's The Way Of The World, Tonight I'm Yours, Gina, Najee's Nasty Groove, etc. EMI-Manhattan 100001

Genesis: Invisible Touch • Land Of Confusion, title song, etc. Atlantic 153740

More Dirty Dancing • Do You Love Me, Love Man, Big Girls Don't Cry, Wipeout, Some Kind Of Wonderful, Cry To Me, more. RCA 130766

The Who's Greatest Hits MCA 164160

Tchaikovsky, 1812 Overture; Romeo & Juliet; Nutcracker Suite • Chicago Symphony/Solti. London DIGITAL 125179

James Galway: Greatest Hits RCA 173233

The Moody Blues: Sur La Mer • I Know You're Out There Somewhere, No More Lies, Here Comes The Weekend, Vintage Wine, etc. Polydor 124546

The Beach Boys: Endless Summer California Girls, Help Me Rhonda, Surfer Girl, more. Capitol 223559

Cinderella: Long Cold Winter • Gypsy Road, Don't Know What You Got (Till It's Gone), The Last Mile, etc. Mercury 114780



Bon Jovi: New Jersey 100516

Strauss, Also sprach Zarathustra Chicago Symphony Orchestra/Reiner. RCA 163627

Charlie Parker & Dizzy Gillespie: Bird & Diz • Leap Frog, My Meancholy Baby, Mohawk, etc. Verve 173413

Robert Palmer: Heavy Nova • Simply Irresistible, Disturbing Behavior, She Makes My Day, More Than Ever, Change His Ways, etc. EMI-Manhattan 100035

The Very Best Of The Everly Brothers Bye Bye Love, Crying In The Rain, Bird Dog, etc. Warner Bros. 103826

Kenny G: Silhouette • We've Saved The Best For Last, title song, Tradewinds, Pastel, Against Doctor's Orders, Let Go, more. Arista 100603

D.J. Jazzy Jeff & The Fresh Prince: He's The D.J., I'm The Rapper • Parents Just Don't Understand, Nightmare On My Street, etc. Jive 264134

Raffi: Singable Songs For The Very Young Shoreline 144494

Elton John: Reg Strikes Back • A Word In Spanish, I Don't Wanna Go On With You Like That, Goodbye Marlon Brando, Town Of Plenty, etc. MCA DIGITAL 100602

Elton John: Greatest Hits, Vol. 1 MCA 163322

Vivaldi, The Four Seasons • English Concert/Pinnock. Archiv DIGITAL 115356

Joe Cocker: Classics Contains 13 Hits! A&M 104887

Bruce Hornsby And The Range: Scenes From The Southside • The Valley Road and Jacob's Ladder, plus others. RCA 180187

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New Age Bach: The Goldberg Variations Joel Spiegelman plays the Kurzweil 250 Digital Keyboard. East-West 100488

John Cougar Mellencamp: The Lonesome Jubilee • Paper In Fire, Check It Out, Cherry Bomb, Rooty Toot Toot, etc. Mercury 134420

Elvis: 18 Number One Hits RCA 172190

Robert Cray: Don't Be Afraid Of The Dark Title song, Don't You Even Care, more. Mercury/Hightone 100471

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Parton/Ronstadt/Harris: Trio • To Know Him Is To Love Him, etc. Warner Bros. 114804

Chicago 19 • I Don't Wanna Live Without Your Love, Heart In Pieces, etc. Reprise 154404

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Alabama: Live RCA 160027

Previn: Gershwin • Rhapsody In Blue, Concerto in F, more. Philips DIGITAL 115437

Eagles Greatest Hits, Vol. 1 Asylum 123481

Keith Richards: Talk Is Cheap • Big Enough, How I Wish, Take It So Hard, Struggle, I Could Have Stood You Up, more. Virgin 100518



Randy Travis: Old 8x10 100008

The Police: Every Breath You Take—The Singles • Don't Stand So Close To Me ('86), Roxanne, etc. A&M 173924

Sting: Nothing Like The Sun • We'll Be Together, They Dance Alone, Be Still My Beating Heart, more. A&M 273965

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Circle 133 on reader service card

Altec Lansing

Altec Lansing has upgraded its Model 201 speaker, part of a general revamping of its speaker line. Now the Model 205, the speaker has been changed from a two-way to a three-way acoustic-suspension system. It has an 8-inch carbon-fiber-cone woofer, a 3½-inch compression midrange, and a 1-inch dome tweeter. Frequency response is rated as 50 to 20,000 Hz \pm 3 dB and sensitivity as 91 dB. Impedance is given as 6 ohms. Dimensions are 22 x 12 x 9 inches. Price: \$550 to \$600 a pair. Altec Lansing, Dept. SR, Milford, PA 18337.

Circle 134 on reader service card



Certron

Certron's Amalfi division has introduced three new Smartfile storage units, the Audio-28 (shown) for tape cassettes and the CD-40 and CD-20 for compact discs. The boxes are made of black plastic with clear-plastic hinged lids for viewing titles. They can be stored upright, placed inside drawers, or hung on walls. The model numbers indicate the respective storage capacity. Prices: Audio-28 and CD-20, \$14.95; CD-40, \$24.95. Certron Corp., Dept. SR, 1651 S. State College Blvd., Anaheim, CA 92806.

Circle 135 on reader service card

Sonance

Sonance has introduced an upgraded version of its Model II two-way in-wall speaker system. It has the same 6-inch woofer, but the original tweeter, with a four-layer voice coil, has been replaced with a 1-inch ferrofluid-damped polycarbonate-dome tweeter. Also new is a first-order electrical crossover that uti-

lizes the tweeter's damping and adds a choke and capacitor combination to the signal path. The nominal crossover point is 3,000 Hz. Price: \$245 a pair including mounting brackets. Sonance, Dept. SR, 32992 Calle Perfecto, San Juan Capistrano, CA 92675.

Circle 136 on reader service card



Ensoniq/Bose

The Bose Acoustic Wave speaker technology has been applied to two models of the Ensoniq electronic piano. The AWP-3000 and the AWP-5000 (shown) both incorporate a 25-watt-per-channel equalized amplifier and speakers by Bose; inputs for a turntable, cassette deck, or CD player enable the pianos to double as stereo sound systems. The AWP-5000 also has a floppy-disk-based digital recorder that can store and play back up to ten four-part songs and a MIDI (musical instrument digital interface) circuit, which enables it to control compatible instruments or to interface with a personal computer. Prices: AWP-3000, \$2,495 to \$2,995; AWP-5000, \$2,995 to \$3,495. Ensoniq, Dept. SR, 155 Great Valley Pkwy., Malvern, PA 19355.

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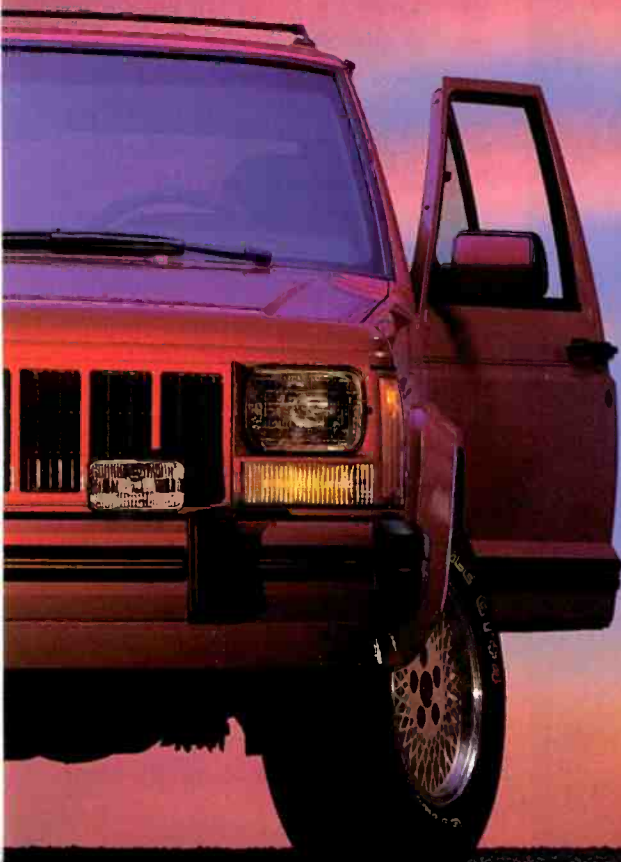
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by Ian G. Masters



Unbalanced Surround

Q I have recently incorporated a surround-sound amplifier into my system, and although I carefully followed the instructions in hooking it up, I am not getting satisfactory results. The front speakers seem to lack the volume they once had, and the rear speakers have much more "kick." Is there a way to set the system up so it will do what it's supposed to?

JAMES CAIN
Denver, CO

A The problem with using dissimilar speakers for front and rear signals is that they almost never match, and such imbalances result. In your case, I suspect that your front speakers are potentially as loud as they ever were but that your rear ones are more efficient, giving them more "kick" for a particular amplifier setting. Differences in frequency response may contribute to this effect as well.

Most surround amplifiers provide a means to balance the front and rear levels, however, and you should use such controls if they exist. The best way is to kill the rear channels and adjust the level so that the front speakers are producing a comfortable volume. Then gradually increase the level of the rear speakers until there is the desired amount of ambience. If the rear channels continue to be overprominent, it might be possible to tame them by means of an equalizer; if not, you might consider swapping the front and rear speakers.

FM Noise

Q My tenth-floor apartment is in the heart of Manhattan, surrounded by taller commercial buildings, and I have great difficulty obtaining clean signals from the two classical FM stations I enjoy listening to, particularly in stereo (the local rock stations seem to come in a bit better, but that doesn't help me). I have tried hooking my tuner up to the TV cable, but that produces even worse results, including the reception of a station at several spurious points on the dial. I have found that the removal of any antenna at all gives the best results; adding even a short length of 75-ohm cable, while it does increase signal strength, also increases the noise. Why is it so difficult to avoid these problems?

WILLIAM M. GREENSTADT
New York, NY

A I suspect you are a victim of a particularly nasty combination: an extremely sensitive tuner, multipath, and an overabundance of signal. The fact that stations pop up in several places on the dial suggests front-end overload, and this is confirmed by the fact that your tuner seems to work best with no antenna at all. You could simply accept the situation and remove the antenna permanently, although this might leave the tuning system vulnerable to signal disruptions caused by your own body as you move about the room. It would also make it virtually impossible for you to receive any distant stations, should you want to, without reconnecting your antenna.

Your best bet would be to use a highly directional antenna (or your cable feed) along with a small signal attenuator, which would give you a stable signal but prevent the input overload. Such attenuators are available at electronics parts stores or at Radio Shack.

Barking in Beethoven

Q To preserve some of my older recordings, I have been copying them onto cassettes. In one of them, I can clearly hear the sound of my dog barking during the quiet passages of a Beethoven sonata. This seems impossible, as I do not have a microphone, but the fact remains that the barking is on the tape. Can you give me an explanation?

ANDREW ZUCCARELLO
Boca Raton, FL

A You may not realize it, but you do have a pretty effective microphone feeding into your system. A vinyl record, particularly if it's not in firm contact with the turntable platter, can be

very sensitive to airborne sounds, and its vibrations are easily picked up by a phono cartridge, which doesn't care whether the oscillations it detects are caused by the record groove or the physical movement of the record itself. Warped discs are particularly prone to this effect, as large parts of them are floating in air. Turntables that support the record only at a few points can cause problems of this sort as well.

The ideal situation is for the record to be supported in the playing area, but not at the raised edge or label area. A number of accessory turntable mats are available with this configuration. If the phenomenon persists even with the right sort of mat, you might try using one of the clamps or weights designed to stabilize records. Make sure your dust cover is closed as well.

As a last resort, put your dog out while you're dubbing.

Switching Out Noise

Q I have an irreplaceable collection of mono LP's. Would it be feasible to construct some sort of device that could remove surface noise by detecting the out-of-phase material where much of the noise occurs?

DALTON AMES
West Linn, OR

A When you are just listening to such records, simply switch your amplifier to the mono mode. Surface noise tends to have a random phase pattern: Some of it is in phase with respect to the recorded signal, some 180 degrees out of phase, and the rest somewhere in between. Mixing the outputs of a stereo cartridge to mono will cancel the 180-degree-out-of-phase noise entirely, and it will partially cancel the noise between 0 and 180 degrees out of phase. The music itself will not be affected, as mono signals have no out-of-phase components. By the same token, in-phase noise will still get through, but you may still achieve an overall noise reduction of about half.

If you want to record the results of this clean-up, however, it will probably be necessary to make a special cable for the purpose because the mono switch on most amplifiers and receivers is placed in the circuit after the tape-monitor loop. An ordinary stereo patch cable can be used: Simply strip a short length of both conductors and connect the two "hot" (center) leads together; this will convert the signal to mono and feed it to both inputs of your cassette deck. If you intend to do this often, joining these hot leads by means of a single-pole single-throw (SPST) switch will allow you to switch from mono to stereo at will. □



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PURSUING DAT

by Ken C. Pohlmann

THE space shuttle is back in orbit, George Bush is president, Vanna White has starred in a made-for-TV movie, and we still don't have DAT. Curiously, no one really knows why. There are all kinds of theories: that early technical troubles with the format caused manufacturers to pause, that disappointing domestic sales in Japan caused them to panic, that the dollar/yen situation just isn't conducive to a new-product introduction, that somehow Philips, godfather to the CD, has put the whammy on DAT.

The only Americans buying DAT equipment are recording professionals, who are delighted with a digital recorder costing considerably less than the \$20,000-plus open-reel models, and individuals buying recorders through the gray market, forgoing the auspices and customer services of the manufacturers.

The majority of consumers are left with nothing. Sure, you can order your new Lincoln with a DAT player, but you can't get but a handful of prerecorded digital audio tapes to play on it. The DAT format languishes as other recording technologies draw closer to actuality. If DAT isn't marketed soon, it will become obsolete. Although that would save the consumer a lot of money, it seems to take the concept of planned obsolescence a little too seriously.

Recently, however, I was invited to Tokyo to witness the unveiling of the Nakamichi 1000. Called a "Digital Audio Recording System," it is, in fact, a DAT recorder, and Nakamichi claims it will be available in the U.S., in both professional and consumer versions, by the time you read this. Barring any other preemptive strike, it will be the first consumer DAT recorder officially sold in the U.S.

Nakamichi thus runs the considerable risk of acting as official javelin-catcher; the Recording Industry Association of America has vowed to file suit against any manufacturer

selling consumer DAT recorders in the U.S. It sees DAT as fulfilling a home recordist's wildest fantasy—the ability to make essentially perfect copies of copyrighted CD's. As if to tempt fate, the professional version of the Nakamichi 1000 can indeed record at 44.1 kHz, the CD sampling rate, through a direct digital input, and according to a Nakamichi spokesman, it can record data directly from a CD despite any copy-inhibit bits on the disc.

The Model 1000 also features a host of technological improvements over earlier DAT decks, such as four heads on its rotary drum, to permit read-after-write monitoring off the tape while recording, and dual-channel digital-to-analog conversion circuitry with 20-bit performance. It may be, in fact, the finest home tape recorder ever marketed. In other words, this digital recorder is the record industry's worst nightmare. Or is it? With a price tag of \$10,000, how many evil, CD-copying teenagers will buy one? On the other hand, Nakamichi clearly has corporate pride riding on this product. The Model 1000 designation has been used only once before, when Nakamichi introduced the world's first three-head cassette deck, a move that launched the cassette into the realm of high fidelity and launched Nakamichi itself.

Of course, the question remains, should you buy a DAT recorder? For the moment at least, the Nakamichi

1000 is the only model available in the U.S. through its manufacturer. Surely other models will appear, probably at correspondingly high prices. In other words, DAT will still not have fulfilled its promise of mass-market digital recording, and the justification of its purchase will remain as elusive as ever, eliciting more speculation than sales.

Which brings us to a final piece of speculation: Perhaps, intentionally or not, DAT will eventually serve the cause of digital recording, but mainly as a sacrificial technology. Perhaps DAT will serve as a trial balloon, testing the technical and legal aspects of digital recording in the American market, testing the waters for the real recording medium of the future, optical discs. Perhaps the record labels, recognizing their position of strength on the DAT issue, will choose DAT as the basis of negotiation for the fate of future recording media. If they're smart, they'll choose to deal with DAT instead of recordable optical discs. With DAT the record companies at least have the potential success of another prerecorded format, whereas with recordable optical discs the only new media will be blank.

One thing is sure. As always, the only constant in audio technology is change. Regardless of how audio pursues its own future, DAT will come, and go. We'll have to wait to find out how long it will stay around. □



The Nakamichi 1000 Digital Audio Recording System includes an outboard digital processor (lower unit) and can record from a CD player's digital output.



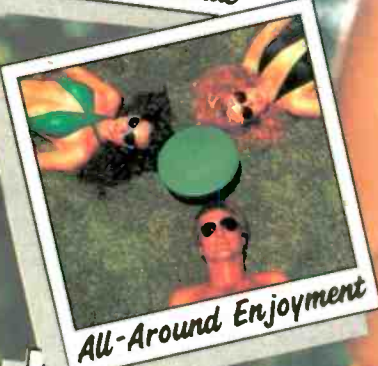
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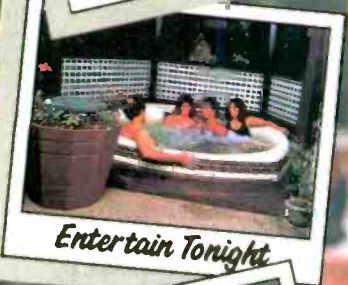
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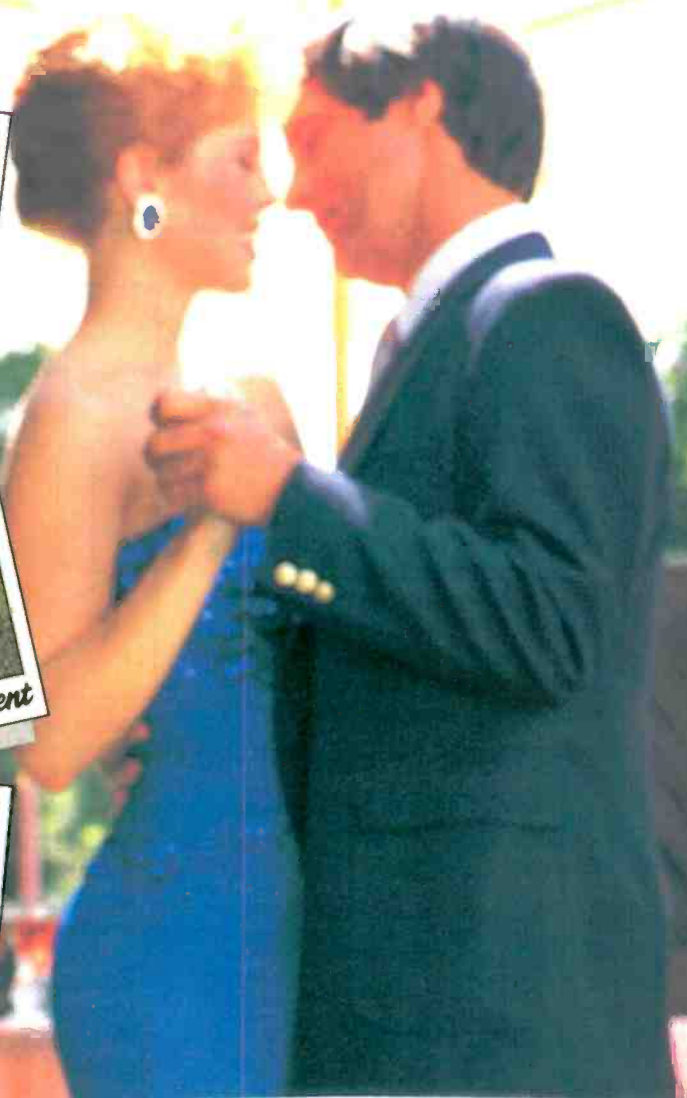
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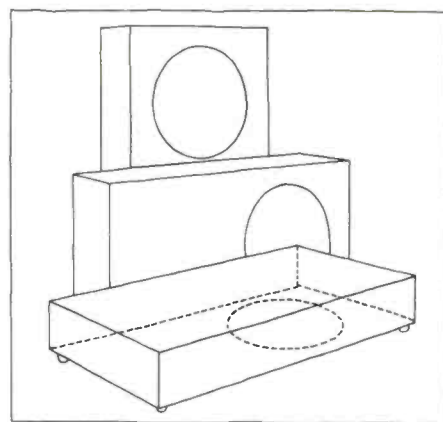
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range, depending upon where the speaker is placed in the room. If you put a conventional speaker where the room can help the low bass, it may hinder the upper ranges, or vice-versa.

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Julian Hirsch
Stereo Review, Sept. '88

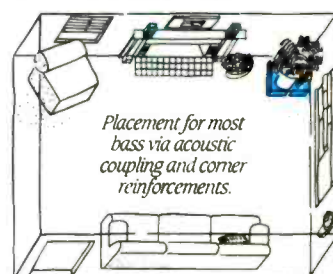
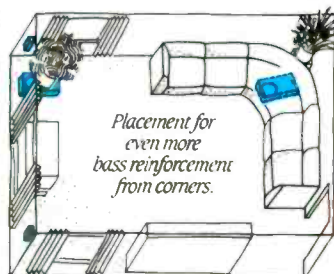
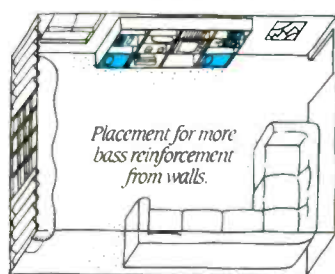
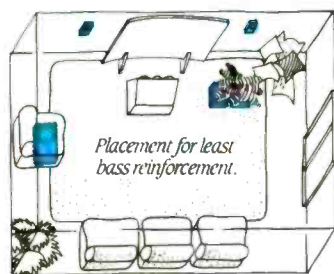
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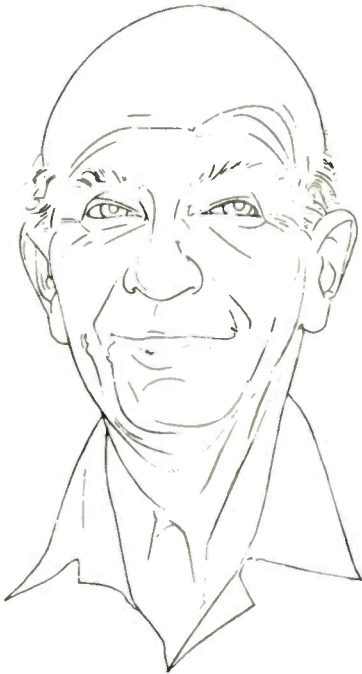
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by Julian Hirsch



COMPONENT INTERDEPENDENCE

ALTHOUGH most audio components are "separate" in the sense that they are physically distinct, and their performance characteristics can usually be measured and described without reference to other components, any one of them by itself is useless. They are meant to operate as parts of a *system* and must be considered in that context.

From time to time I receive questions about possible incompatibilities between various components. Clearly, many people are aware of the possibility and concerned lest they degrade a system's performance, or even damage it in some way. Let me reassure you that, while performance may suffer in some cases, it is extremely unlikely that a correctly connected system will be damaged because of component incompatibility.

Some years ago, there was reason to be concerned with interconnection compatibility. For example, almost from the beginning most magnetic phono cartridges were de-

signed to give their flattest response when terminated in a 47,000-ohm resistance, which remains a *de facto* standard today, but there were some exceptions, cartridges with recommended loads from 10,000 to 100,000 ohms. The penalty for a mismatch, at one extreme or the other, was (and still is) a loss or boost of high-frequency response. Fortunately, the audible result of a mismatch is rarely serious enough to render the system unlistenable.

The capacitance across a cartridge's termination resistance can also affect its frequency response. The rated ("flat") response is usually specified with a capacitance in the range of 100 to 500 picofarads, but this capacitance is beyond the ability of the average user to verify or control. A few preamplifiers provide switch-selectable phono capacitance and resistance values. Since the capacitance of the cables from the head of the tonearm to the amplifier input, as well as within the amplifier itself, is usually unknown, a user must rely on his hearing to decide whether the selected values are correct or to set the optimum values. If you try adjusting these parameters, you will hear for yourself how minor their effects are with most cartridges, making them a relatively unimportant consideration.

A few decades ago, the output rating of a magnetic cartridge was likely to fall between 2 and 20 millivolts. In those days phono-preamplifier overload limits were not specified, and using a high-output cartridge with some amplifiers was likely to produce overload distor-

tion on program peaks. On the other hand, using a low-output cartridge with a preamp designed to handle high input levels could require setting the volume control at or near its maximum, with a corresponding increase in system hum and noise levels. This problem no longer exists. Today's high-quality moving-magnet cartridges, including models in every price range, generally have rated outputs of 3 to 5 millivolts and are compatible with all modern preamplifiers.

Within the amplifying system itself there are few possibilities of mismatching. One might be driving a power amplifier having a low input impedance (10,000 ohms, say) from a preamplifier with an output impedance of several thousand ohms. If the preamplifier output's coupling capacitance is too low, such a combination can roll off the very low frequencies. With most power amplifiers, however, which typically have input impedances in the range of 50,000 to 100,000 ohms, this is not a problem. And if the preamplifier has an output impedance of 600 ohms or less, as most good ones do, it can drive any power amplifier (even through long, shielded cables) without alteration of frequency response.

The interface between a separate tuner and a preamplifier is rarely critical. There have been a few tuners with high output impedances (on the order of 10,000 ohms), but even these can easily drive the 50,000- to 100,000-ohm high-level inputs of most preamplifiers; with the usual tuner output impedance of 1,000 ohms or less, there is no problem at all. So far as I know, a similar situation exists with all CD players as well as accessories that connect to a tape loop or between a preamplifier and a power amplifier.

The first interface where genuine incompatibility can occur is between the amplifier output and the loudspeaker. There are two distinct areas of concern: whether the available power output is adequate given the speaker's sensitivity and whether the amplifier's ability to drive very low load impedances or reactive loads matches the demands of the speaker's complex impedance characteristics. With most speakers

Tested This Month

*Pioneer CT-S800
Cassette Deck
Wharfedale Diamond III
Speaker
Sherwood CD-1160R
Compact Disc Player
Carver Model 6250
AM/FM Receiver
AudioSource EQ Ten
Equalizer/Analyzer*

TECHNICAL TALK

and most amplifiers, neither of these potential mismatches is likely to be a source of trouble, but there are some combinations that are prone to misbehavior.

In the first area—power output relative to sensitivity—there are no hard and fast rules. The imponderables of room size and acoustic treatment, speaker placement, and listening preferences (with respect to program type and volume level) can far outweigh the bare specifications of wattage and decibels. In general, a large listening room, carpeted and furnished with upholstered furniture, will require more power from any system for a given listening level than a small, sparsely furnished room. And reproducing chamber music or vocals at realistic levels, or any type of program at background levels, requires less power than “natural volume” reproduction of orchestral or rock music. So much should be obvious. The range of power requirements between these extremes, however, can be surprisingly large: A ratio of 100 to 1 or higher is perfectly possible.

Power requirements should be considered and discussed with the dealer or salesperson when you shop for a system. There is a considerable price difference between a 20-watt amplifier and a 500-watt amplifier, and while the larger one can be used in any system (with care!), the *smaller* one might prove hazardous to your speakers if it is systematically overdriven in an attempt to raise the volume beyond its capabilities.

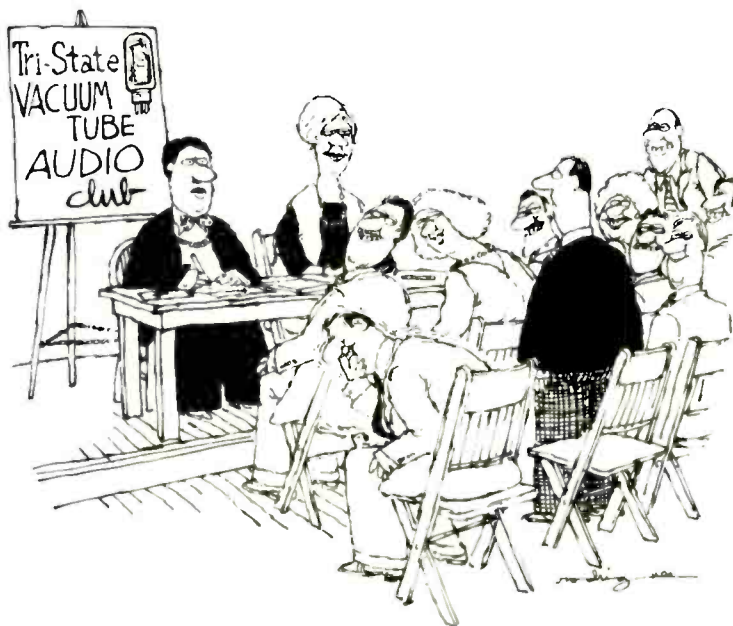
Speaker sensitivity is a commonly published specification. It is an indication of the sound-pressure level (SPL), in decibels (dB), that will be produced at a 1-meter distance when the speaker is driven by a 2.83-volt signal (equivalent to 1 watt into an 8-ohm load). The sensitivity specification is useful when you are comparing speakers (although it has nothing to do with sound quality, size, or price) since it indicates their *relative* power requirements for a given sound level. Most home speakers have rated sensitivities between 86 and 90 dB. A few carry ratings as high as 96 dB or more, and fewer still are rated as low as 80 or 82 dB.

Once you have established a reference, a combination that gives suitable performance in your room—such as a 30-watt amplifier and a speaker with an 87-dB sensitivity—it is easy to judge the effect of changing the speaker or the amplifier. A 3-dB change in sensitivity (or volume level), which is barely audible, corresponds to doubling or halving the power. Changing the speaker in the example above to one rated 90 dB is equivalent to raising the amplifier power to 60 watts. Power is cheap enough these days that you should probably not plan to use less than a 30-watt amplifier if you have any serious plans for good music reproduction. Once you get to the 80- or 100-watt class, you will be equipped to drive any but the most exotic speaker systems at healthy sound levels.

Virtually any amplifier made today can drive speaker loads of 4 ohms or more without difficulty (impedances higher than rated do not pose any problems for the amplifier). The difficulty comes when the speaker impedance drops *below* some safe minimum—and every amplifier has its lower limit. Speaker impedance varies widely with frequency, and the actual impedance of a “4-ohm” speaker may reach as high as 20 to 30 ohms, and as low as

2 ohms or less, at various audio frequencies. Not all amplifiers will drive a 2-ohm load safely; an amplifier may simply shut down when certain programs are played too loud, or (if less well protected) it may blow its fuses or even the output transistors. While much has been made of this problem, it must be realized that it exists only with relatively few speakers in combination with relatively few amplifiers.

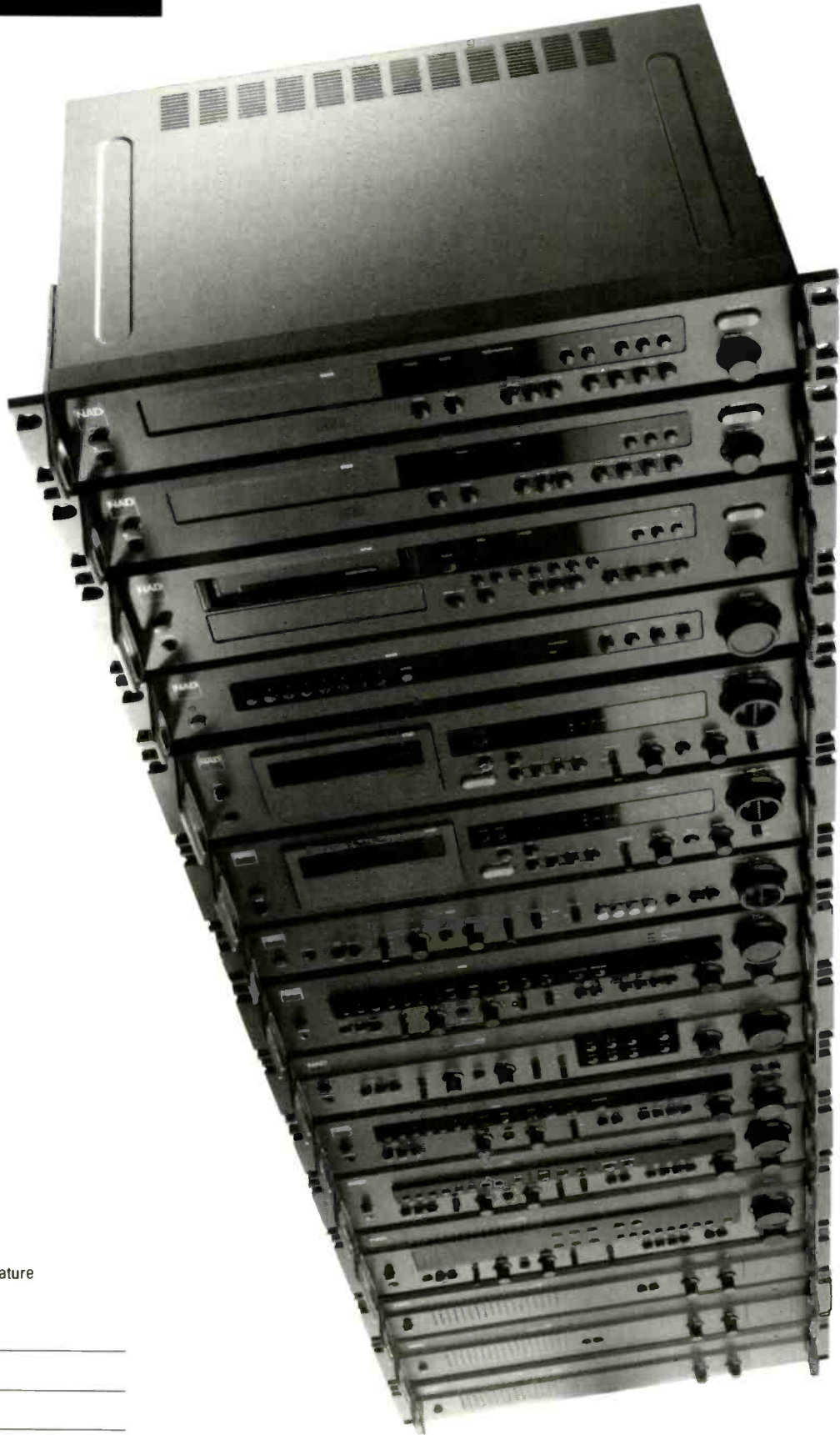
Summing up the compatibility situation, it is almost negligible between the electronic system components (tuner, CD player, tape deck, amplifier, preamplifier) or between the phono cartridge and the preamplifier. In most cases where such incompatibility exists, it results only in a slight alteration of frequency response or a slight increase in distortion, not necessarily to an audible degree. The most serious compatibility problems can occur between the amplifier and the speakers (and between the speakers and the listening room, which is a very involved subject in itself), and these are the only mismatches that can, under worst-case conditions, damage the components involved. Under most conditions, however, even these mismatches will be manifested only by audible distortion with certain program material. □



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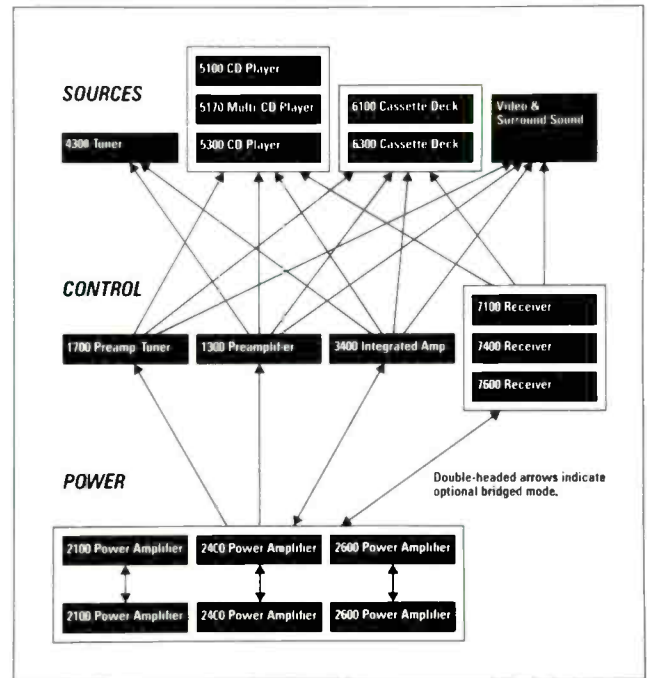
Don't junk the receiver, add an amplifier

When the time is right (you move your system to a larger room, or new living quarters, or acquire new speakers, for instance) add a second amplifier.

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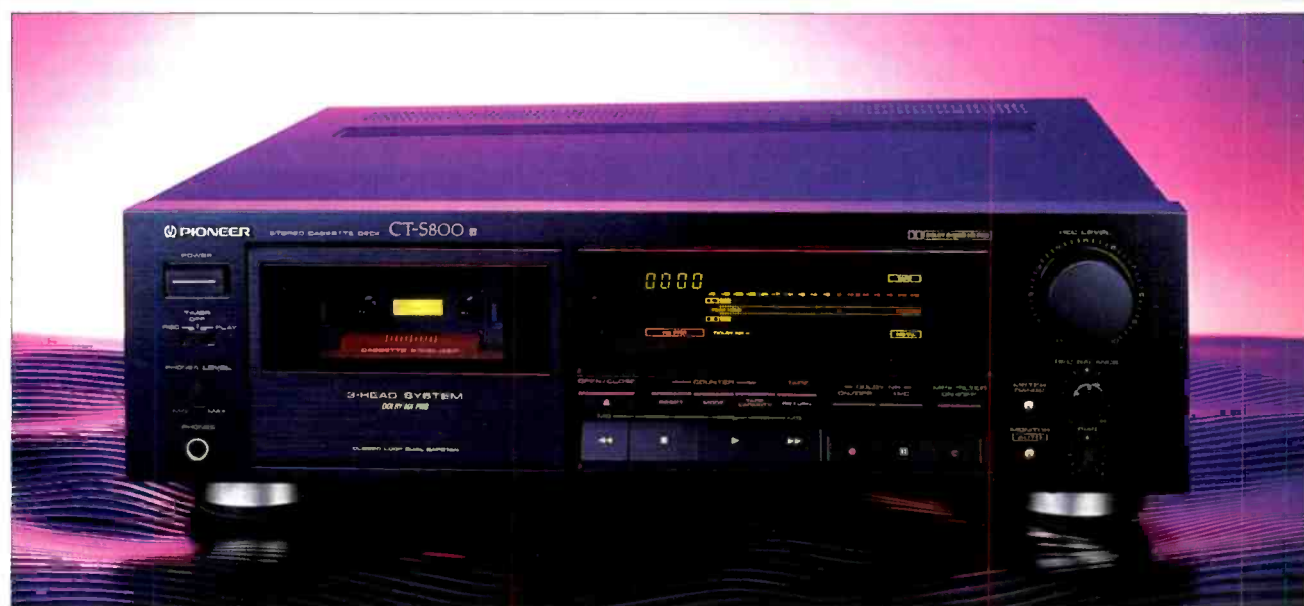
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PIONEER CT-S800 CASSETTE DECK

Craig Stark, Hirsch-Houck Laboratories

At first sight, the new Pioneer CT-S800 cassette deck seems simply to be a typical up-scale machine. It combines such well-established high-performance features as three heads, dual capstans, Dolby B and Dolby C noise reduction, and Dolby HX Pro headroom extension with conveniences such as a three-mode tape counter, a fifteen-selection music-search facility, and dual-sensitivity record-level indicators. Below the surface, however, the CT-S800 incorporates a number of design features whose strongest appeal is to the knowledgeable, really serious audiophile: a direct-coupled playback head, multiple power supplies fed from a highly shielded power transformer, a copper-clad antiresonant chassis, and an antivibration cassette-shell mounting.

The obvious benefit of using separate record and playback heads is that the user can immediately compare the sound of the source with its recorded result. Like most three-head decks today, the CT-S800 has the record and playback head elements mounted in a common case.

Unlike most such decks, however, the CT-S800 uses different head materials in the two sections. The playback head element is made of an amorphous magnetic core material with oxygen-free-copper coil windings to minimize noise and maximize linearity for low-level signals. The first-stage playback electronics are direct-coupled to eliminate the need for a coupling capacitor and thus a source of low-frequency phase shift. The record head, on the other hand, which must handle the high bias currents of metal-particle tape without overload, has a hardened permalloy core. Ferrite is used in the erase head, where even higher current levels are encountered.

Similar evidence of attention to engineering details is found in the tape transport. The overall design uses the proven dual-capstan, closed-loop principle, which minimizes the speed fluctuations we hear as wow-and-flutter. To prevent common rotational frequencies, which can actually augment wow-and-flutter, the CT-S800's two pairs of capstans and pinch-rollers have

slightly different diameters. This has the additional beneficial effect of providing the proper amount of tension to the tape to hold it snugly against the heads.

Any initial tape slack is taken up when a cassette is loaded. At the same time, the tape type is automatically detected and appropriate factory-set bias and equalization parameters are switched in. The rear of the cassette-well door is equipped with a relatively new development, a spring-loaded plate that is designed to eliminate cassette-shell vibrations. Unlike some similar designs, however, in the CT-S800 this stabilizing mechanism does not obscure label visibility or interfere with the removal of the door for periodic head cleaning and demagnetizing. The deck's antivibration theme even extends to the use of a honeycomb chassis, copper-plated for better electrical conductivity, a massive cast power transformer (the same used in Pioneer's CD players), and enormous, turntable-like feet.

The four-digit electronic counter of the CT-S800 can be set to show elapsed time, remaining time, or counter revolutions; a button calibrates it for the tape length in use. The peak-holding record-level indicators have fifteen segments per channel and can be switched between scales calibrated from -35 to $+12$ dB or from -4 to $+16$ dB. The higher scale has 1-dB increments be-

TEST REPORTS

tween ± 4 dB, and both scales are equipped with red warning markings, which vary with the tape type in use, that correspond to the maximum undistorted recording level.

The high-speed winding buttons of the CT-S800 can be programmed to skip up to fifteen selections in either direction, though we found the single-button return to 0000 a

more important convenience feature. The usual pushbutton pair controls the selection of the Dolby noise-reduction system; since Dolby HX Pro does not require decoding, it is not switchable. A switch is provided, however, for the 19-kHz FM-multiplex filter, and in one of its positions the record-monitor switch automatically flips the output from source to tape when you change from record to playback mode, or vice versa.

There is a control that allows the user to optimize the record bias, but since no built-in tone generator is provided, this must be done by ear using low-level FM hiss as the test signal. The large record-level control is augmented by a smaller balance knob, and the customary timer-control switch is provided. A control is provided for adjusting the volume at the front-panel headphone jack, but there is unfortunately no way to adjust the output at the regular playback jacks.

The Pioneer CT-S800 measures 16 $\frac{1}{8}$ inches wide, 14 $\frac{1}{4}$ inches deep, and 5 $\frac{1}{4}$ inches high, and it weighs a little over 21 pounds. Price: \$750. Pioneer Electronics (USA) Inc., Dept. SR, P.O. Box 1540, Long Beach, CA 90801.

Lab Tests

The playback frequency response of the CT-S800 was extremely flat. It varied by less than ± 1 dB over the 31- to 18,000-Hz range of our IEC-standard (BASF) ferric and CrO₂ test tapes.

The effect of the Dolby HX Pro headroom-extension circuitry in providing greater treble response at high levels can be seen in the 0-dB-level record-playback curves shown in the graph. With our center-line samples of TDK AD (ferric) and TDK SA (chrome-equivalent), the response at the 0-dB level did not drop to -3 dB until the frequency was above 10,000 Hz; the metal-particle TDK MA made it all the way to 20,000 Hz at this level. At the low-frequency end, response was down by only 3.6 dB at 20 Hz, which is very good indeed.

Our sample deck was a little underbiased for TDK MA, however, as can be seen in the graph: There was a rising response at 20,000 Hz

FEATURES

- Separate record and playback heads
- Dual-capstan closed-loop transport
- Four-digit, three-mode electronic tape counter
- Fifteen-segment-per-channel, switchable-scale peak-level indicators
- Dolby HX Pro headroom extension
- Dolby B and Dolby C noise reduction
- User-adjustable bias control
- Fifteen-selection music-search facility
- Automatic tape/source switching
- Switchable FM-multiplex filter
- Headphone jack with level control
- External timer operation

LAB MEASUREMENTS

Fast-forward time (C-60): 77 seconds

Rewind time (C-60): 79 seconds

Speed error: +0.39%

Dolby tracking error: Dolby B, +0.8, -0.4 dB; Dolby C, +1.7, -0.5 dB

Wow-and-flutter: 0.017% wrms, 0.039% DIN peak-weighted

Line input for indicated 0 dB: 70 mV

Line output at indicated 0 dB: 0.38 volt

Meter indication at IEC-standard 0 dB: +1 dB

Tape: TDK AD (Type I, ferric)

IEC 0-dB distortion: 0.72%

Meter indication at 3% THD + noise: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	52.2	58.9	55.8
Dolby B	60.1	68.5	66.1
Dolby C	61.6	74.6	75.5

Tape: TDK SA (Type II, chrome-equivalent)

IEC 0-dB distortion: 0.92%

Meter indication at 3% THD + noise: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	54.3	60.3	57.2
Dolby B	60.5	69.3	67.5
Dolby C	62.4	76.2	76.5

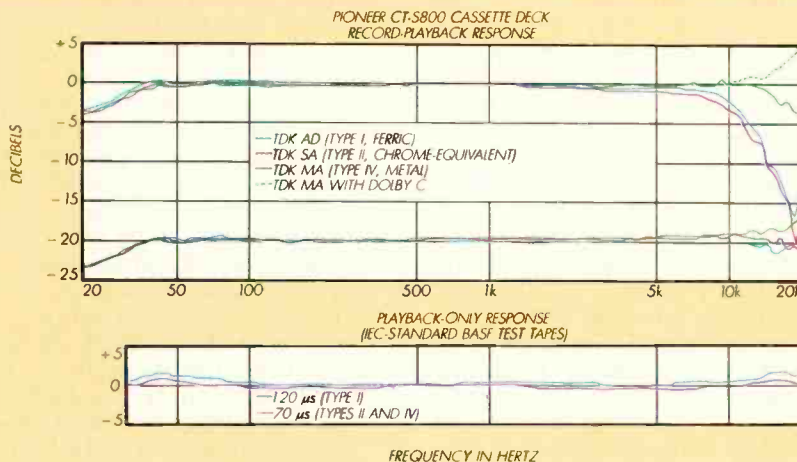
Tape: TDK MA (Type IV, metal)

IEC 0-dB distortion: 0.92%

Meter indication at 3% THD + noise: +6 dB

Signal-to-noise ratios (in decibels):

	Unwtd.	A-wtd.	CCIR/ARM
NR off	55.2	61.4	58.5
Dolby B	61.5	70.5	68.8
Dolby C	63.8	77.1	77.8



when Dolby C was switched in at the 0-dB level, and there was a rise in treble output without Dolby C at the -20-dB level. Unfortunately, as in most decks with adjustable bias, the bias control of the CT-S800 affects the bias only for ferric and CrO₂-type tapes, so it could not correct this.

The measured signal-to-noise ratios of the CT-S800 were excellent, as were its wow-and-flutter figures. Dolby tracking error was extremely low, within ± 1 dB with Dolby B and ± 2 dB with Dolby C, using TDK SA at -20, -30, and -40 dB. Record sensitivity was normal. Playback output, though within the normal range, was distinctly on the low side, which is a matter for concern only if your amplifier tends to hum when its volume control is advanced slightly beyond its normal setting.

Comments

We were extremely impressed with the Pioneer CT-S800 both mechanically and sonically. Its transport controls had an excellent feel and were exceptionally quiet in operation. While the numbers on its level indicators are much too small to be read from any distance, the color coding and expanded-scale option proved adequate compensation. We would have liked a playback level control and more complete bias and sensitivity adjustments, but these would have added substantially to the deck's cost.

In our listening tests the CT-S800 performed no less impressively. With both prerecorded tapes and those we recorded on it, the CT-S800 imparted none of the "grainy" or "edgy" quality that frequently results from higher than desirable wow-and-flutter. Sonic imaging was clear and distinct and was only the *slightest* bit narrower than in the original source. Frequency response was broad and uncolored—we could not hear the measured 3-dB loss at 20 Hz—and the Dolby circuits eliminated all but the faintest vestigial hiss in "silent" spots. In short, the Pioneer CT-S800 proved to be a deck one could live with very happily, and we can recommend it with enthusiasm.

Circle 140 on reader service card



WHARFEDALE DIAMOND III SPEAKER SYSTEM

Julian Hirsch, Hirsch-Houck Laboratories

THE Wharfedale Diamond speaker was introduced in its original form several years ago. It was a true minispeaker, and when we tested it (April 1984) we reported that it had exceptionally fine sound quality for its size and price. Wharfedale, a British speaker manufacturer of long standing, later left the United States market and has only recently returned, bringing to this country the latest version of the little speaker, the Diamond III, which incorporates a number of improvements.

The Diamond III is a two-way system with a 4½-inch woofer in a rear-vented enclosure. The port is designed to be placed close to the rear wall; the proximity of the wall affects the tuning of the speaker and enhances its bass performance. The speaker's dimensions—9½ inches high, 7¼ inches wide, and 8 inches deep—and its weight of just under 7 pounds make it ideal for bookshelf mounting. The binding-post connectors extend ¾ inch from the rear, effectively determining the mini-

mum distance from the wall (using banana plugs increases the minimum spacing to about 2 inches).

There is a crossover at 3,500 Hz to a ¾-inch polyamide-dome tweeter, which is damped by ferrofluid. According to the importer, it is a fifth-order crossover (30 dB per octave), although this seems rather extreme. The woofer cone is made of a mineral-filled homopolymer of polypropylene, which is said to keep sound coloration extremely low. The black cloth grille is easily removable.

Wharfedale provides few specifications for the Diamond III other than a nominal impedance rating of 8 ohms and a recommendation that it be used with amplifiers rated between 15 and 100 watts per channel. An active (powered) version of the speaker is also available. Called the Active Diamond Plus, it is said to be identical in size and acoustic properties to the Diamond III, but each speaker unit also contains a small, 20-watt power amplifier with an on-off switch and volume control. The Diamond III is available

TEST REPORTS

in a choice of fifteen finishes (our test units were black). Price (per pair): Diamond III, \$300; Active Diamond Plus, \$350. Wharfedale, Dept. SR, P.O. Box 2146, Peekskill, NY 10566-2146.

Lab Tests

Our response measurements were taken with the speakers mounted on stands 26 inches high and a couple of feet from the wall. Our measurement techniques—including quasi-anechoic bass-response measurements made separately at the port and cone with close microphone spacing—made it impractical to use Wharfedale's suggested placement (although the company does not rule out locating the speakers at a distance from a wall). Listening tests, however, were done with the speakers placed on shelves and as close to the wall as possible (about 2 inches).

Splicing the bass measurements to the room-response curves produced a rather unusual composite curve, which agreed fairly well with an anechoic response curve supplied by Wharfedale (not run on the same speaker samples, however). The speaker's output reached maximum at 800 Hz, and it fell off at roughly 2 to 3 dB per octave at lower and higher frequencies. There was a rise below 100 Hz, to a maximum of 5 dB at 75 Hz, and another rising response above 10,000 Hz, to +6 dB at 20,000 Hz. Despite the shape of the response curve, its total variation was only ± 4 dB from 50 to 20,000 Hz, a very respectable response from any speaker, and especially a low-priced minispeaker.

The Diamond III's minimum impedance was 6 ohms at 400 Hz, and its maximum was 25 ohms at 42 and 100 Hz. Overall, its 8-ohm rating is realistic. System sensitivity was moderate: a sound-pressure level (SPL) of 88 dB at 1 meter with a pink-noise input of 2.83 volts.

Bass-distortion measurements were made with a constant input of 3.5 volts, corresponding to a 90-dB midrange SPL. A small woofer cannot deliver high output levels without distortion, but the Diamond III's driver maintained a typical distortion level of about 2.5 percent from 100 to 50 Hz (its effective low-

er limit). Below 50 Hz the output was not particularly useful, and the distortion rose rapidly to 10 percent at 40 Hz. The effective crossover was at about 100 Hz, but the distortion at the port was always large. The port's principal function appears to be to control the woofer loading and the system impedance rather than to augment the bass output. This is also implied by Wharfedale's suggestion to vary the spacing from the back wall if needed to correct the system's frequency balance, since the proximity of the wall can have a considerable effect on the tuning of the system resonances.

Pulse power measurements hardly seemed worthwhile, since this is obviously not a speaker that should be driven to high acoustic output levels. Nevertheless, at 100 Hz the woofer "bottomed" noisily at a very respectable 72 watts into its 25-ohm impedance. At higher frequencies, the system's impedance of about 8 ohms made it impossible to overdrive it with a Carver Mono-Block amplifier, which clipped at 960 watts at 1,000 Hz and 860 watts at 10,000 Hz, with no evidence of serious distortion in the speaker's acoustic output.

The horizontal dispersion of the system reflected the operation of the woofer well into the mid-treble region. A "beaming" effect began well below the 3,500-Hz crossover frequency, resulting in output differences of up to 4 dB in the range from 1,000 to 2,000 Hz between the axial response and a measurement 45 degrees off-axis. The two curves merged at about 3,000 Hz, and they diverged again at higher frequencies (above 12,000 Hz) because of tweeter directivity.

The group delay of the system (a measure of its phase linearity) was exceptionally constant. From about 500 to 30,000 Hz, the overall variation was less than 0.4 millisecond, and over most of that range it was less than 0.2 millisecond. Even in the woofer range, from 200 to 4,000 Hz, the delay variation was well under 1 millisecond.

Comments

The Wharfedale Diamond III, while only slightly larger than most

inexpensive minispeakers, did not *sound* like one. It had none of the tinny quality, thin bass, or piercing upper-midrange that characterizes the typical miniature speaker. On the other hand, it did not sound like most larger speakers, even the usual bookshelf type. Rather, it fell between the two extremes, although generally favoring the larger speakers rather than the smaller ones.

The Diamond III's sound did not convey many clues to its size. Mixed with a group of larger speakers, it was surprisingly difficult to pick it out from the others merely by listening. One might think from the response curve that it would have a somewhat hard or nasal sound, corresponding to its emphasized 800-Hz output, but that was not the case, probably because of the small amplitude of that emphasis (only a few decibels above the output through most of the audible range). The subjective frequency balance was excellent, and except when playing music with considerable low-bass content, it gave no hint of the size of its woofer. The highs were not at all prominent, but they were certainly there (possibly the midrange dominance accounts for the lack of treble emphasis).

The sound was really quite smooth, and always listenable. We never heard an unpleasant sound from these speakers (although trying to play them *loud* would surely produce that result). The Diamond III is not for rock fans, nor for anyone who likes to hear his reproduced music "life size." It was not meant for that purpose, and it cannot be pushed too far with impunity. Perhaps its name is the best clue to its true nature—a high-quality diamond is not necessarily large.

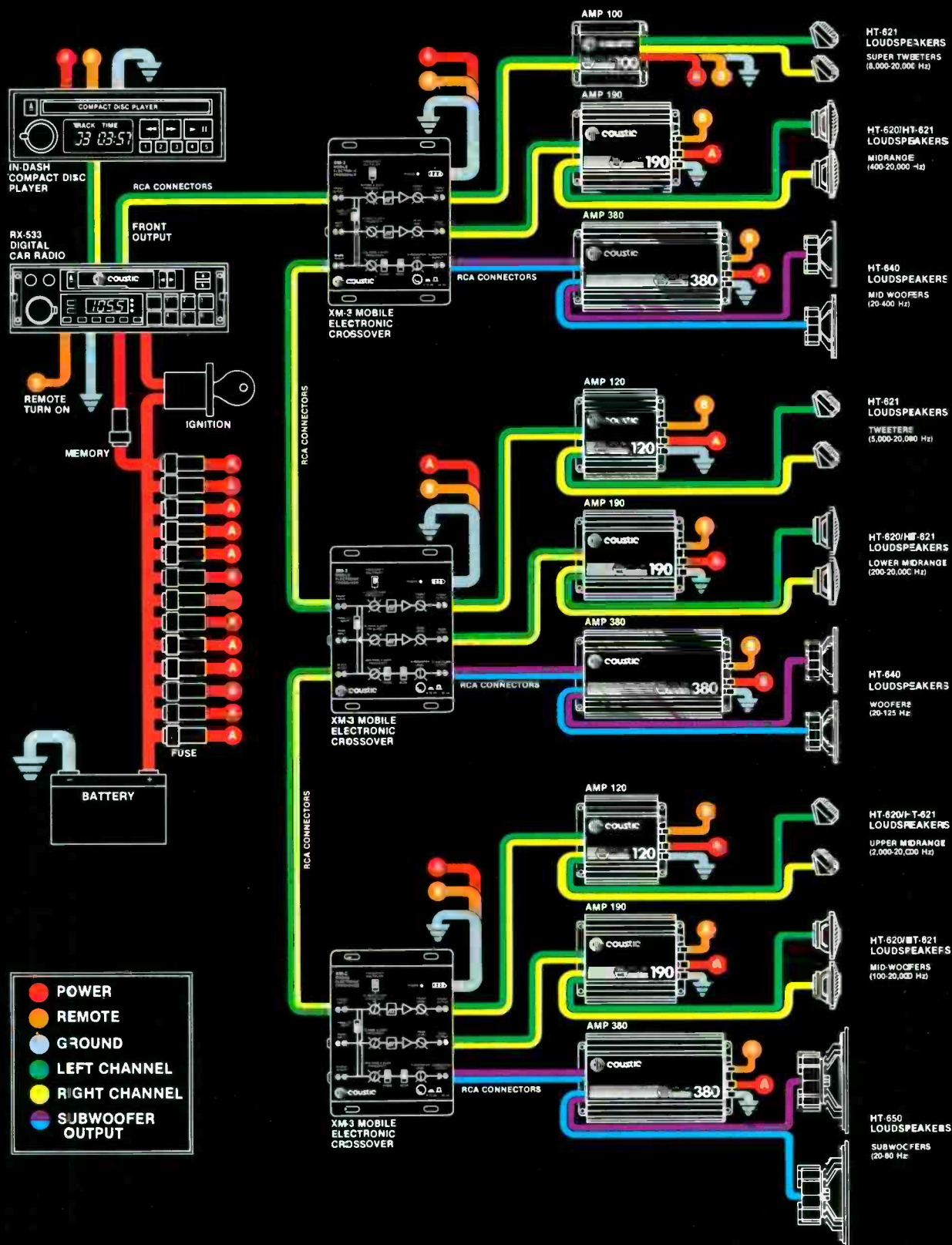
The Wharfedale Diamond III is a fine small speaker, scaled for use in small rooms and especially on bookshelves (unlike most "bookshelf" speakers, which require oversized and reinforced shelves to support them). Even though it might not appeal to the advanced audiophile as a primary speaker, its sound is musical and should offend no one. We think it would make an excellent auxiliary speaker in a surround-sound system, too.

Circle 141 on reader service card

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JOOK LEUNG

SHERWOOD CD-1160R COMPACT DISC PLAYER

Julian Hirsch, Hirsch-Houck Laboratories

SHERWOOD'S CD-1160R is an inexpensive, front-loading CD player. It can be programmed to play up to sixteen tracks in any order, and it provides a random-play feature, repeat of one or all tracks, and auto space, which inserts a 3-second silent interval between tracks as they are played for taping purposes.

Most of the operating controls are pushbuttons across the bottom of the panel, below the display window. Among them are a TIME button, which changes the display from the current track number and its elapsed time to the remaining time on that track or on the disc, and a PROG/REV button, used to program playback in any desired track order and to review the stored sequence.

The track-skipping and search modes share the same buttons for forward and reverse directions. A

momentary touch skips to the next or preceding track, and holding a button in produces a fast scan with audible sound. Once you become accustomed to this system, still not common in full-size home CD players, it is much easier to use than the typical configuration with separate pairs of controls for the two actions.

The front-panel display uses orange fluorescent numbers and letters that are exceptionally visible from directly in front of the player. When the display is viewed from an off-axis position, however, the pattern of the unlit segments becomes visible and impairs legibility. When the player is first turned on, the word DISC appears. After a disc is loaded, its total playing time and number of tracks are displayed. Words appear, as appropriate, to show the status of the various oper-

ating modes (PROGRAM, SPACE, REPEAT, RANDOM) as well as the conventional symbols for play and pause.

The rear apron of the CD-1160R contains, in addition to the audio output jacks, a special Digilink connector enabling the player to be operated by the remote control for a compatible Sherwood amplifier or receiver. A special cable is supplied to connect the player with the control component.

The manufacturer's specifications for the CD-1160R indicate that it uses a double-oversampling (88.2-kHz) digital-to-analog converter with a digital filter. The rated frequency response is 20 to 20,000 Hz ± 0.5 dB, the signal-to-noise ratio more than 93 dB, and the total harmonic distortion less than 0.003 percent. The player measures 17¼ inches wide, 10¾ inches deep, and 2¾ inches high. It weighs 8 pounds, 2 ounces. Price: \$249. Sherwood, Dept. SR, 13845 Artesia Blvd., Cerritos, CA 90701.

Lab Tests

The frequency response of the Sherwood CD-1160R was flat with-

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You'll probably notice our 50-watt RX-533 offers obvious features such as Digital AM/FM cassette/radio with Dolby® B & C noise reduction, 24-preset stations, preset scan, tape program search, separate bass & treble tone controls, etc., and of course, it's *removable!*

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TEST REPORTS

in ± 0.2 dB from 5 to 20,000 Hz and within ± 0.1 dB over most of that range. Channel separation was about 85 dB at the low and middle frequencies, narrowing to 65 to 70 dB at 20,000 Hz. The interchannel phase shift increased linearly from zero at the low and middle frequencies to 42 degrees at 20,000 Hz.

The 1,000-Hz distortion (THD + noise) was almost independent of signal amplitude, measuring 0.008 percent in one channel and 0.006 percent in the other. At low levels the D/A converter showed the typical sort of linearity errors, with the output being higher than the correct value by 2 dB at -70 dB, 4 dB at -80 dB, and 9 dB at both -90 and -100 dB. The A-weighted S/N was about 90.5 dB. The playback frequency error (a function of the accuracy of the quartz-crystal oscillator in the player) was a negligible +0.0186 percent.

Comments

The Sherwood CD-1160R, one of the least expensive component CD players on the market, has a full complement of operating features, and in our tests it delivered the kind

of electrical performance and listening quality expected of the digital medium. To be sure, it did not equal the performance of many more expensive players, but its principal failing was in the low-level linearity of its D/A converters, a characteristic it shares with many other CD players, including some that sell for much more. Although this nonlinearity can be measured, it is normally not audible except under special listening conditions.

In fact, the only major clue to the cost-cutting design of the CD-1160R was the mechanical noise it made when opening or closing its disc drawer. Unlike the silent, silky smooth operation of most costlier players, the Sherwood's drawer movements were accompanied by audible scraping and "clunking" sounds. Nevertheless, the chassis was built solidly enough to withstand fairly hard impacts on its top and sides before the player mistreated, and there were no other problems that we could discern throughout our use and listening tests. Overall, the CD-1160R is an excellent value.

Circle 142 on reader service card

FEATURES

- Three-beam laser tracking
- Double-oversampling (88.2-kHz) D/A converter with digital filtering
- Front-loading, motor-driven disc drawer
- Repeat of single track or entire disc
- Auto Space to insert 3-second interval between tracks
- Random play
- Programmable to play up to sixteen tracks in any order
- Track skipping and fast scanning (with audible sound) in both directions
- Display of track number, playing time, operating status
- Time display switchable to show remaining time on current track or disc, elapsed time on disc
- Digilink connection for remote control through compatible Sherwood components

LABORATORY MEASUREMENTS

Maximum output level: 1.85 volts
Total harmonic distortion at 1,000 Hz: 0.006% referred to 0, -10, or -20 dB
Signal-to-noise ratio (A-weighted): 90.5 dB
Channel separation: 85 dB at 100 and 1,000 Hz, 77 dB at 10,000 Hz, 70 dB at 20,000 Hz
Frequency response: ± 0.2 dB from 20 to 20,000 Hz

Maximum phase shift (from 5,000 to 20,000 Hz): 42 degrees at 20,000 Hz
Low-level linearity error (with dither): 2 dB at -70 dB, 4 dB at -80 dB, 9 dB at -90 and -100 dB
Cueing time: 3 seconds
Cueing accuracy: A
Impact resistance: top, B; sides, A
Defect tracking: tracked maximum-level defects on Philips TS5A test disc

Prism Effect

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CARVER MODEL 6250 AM/FM RECEIVER

Julian Hirsch, Hirsch-Houck Laboratories

THE Model 6250 from Carver Corporation is a very powerful AM/FM stereo receiver. It is rated to deliver 125 watts per channel into 8 ohms, or 140 watts into 4 ohms, from 20 to 20,000 Hz with no more than 0.1 percent total harmonic distortion. In addition to its audio functions, it can serve as a video control center, with audio and video switching facilities for two VCR's and a video output to a monitor.

The Model 6250 is styled like other Carver receivers: A large digital frequency display and LED indicators for signal strength and other operating parameters are located in the center of the panel. Surrounding the display are pushbutton controls

for tuning and input selection, including six preset buttons. Besides the tuner there are inputs for a moving-magnet phono cartridge, an auxiliary line-level source, two audio tape decks, a CD player, and the video sources.

Other buttons to the right of the central group operate the special features of the receiver, including Carver's Sonic Holography circuit for enhancing the ambience and sound-stage width of stereo programs, the Asymmetrical Charge-Coupled Detector (ACCD) circuit, which reduces the effect of multipath distortion on stereo FM programs, and the loudness-compensation circuit.

A power-output display at the left

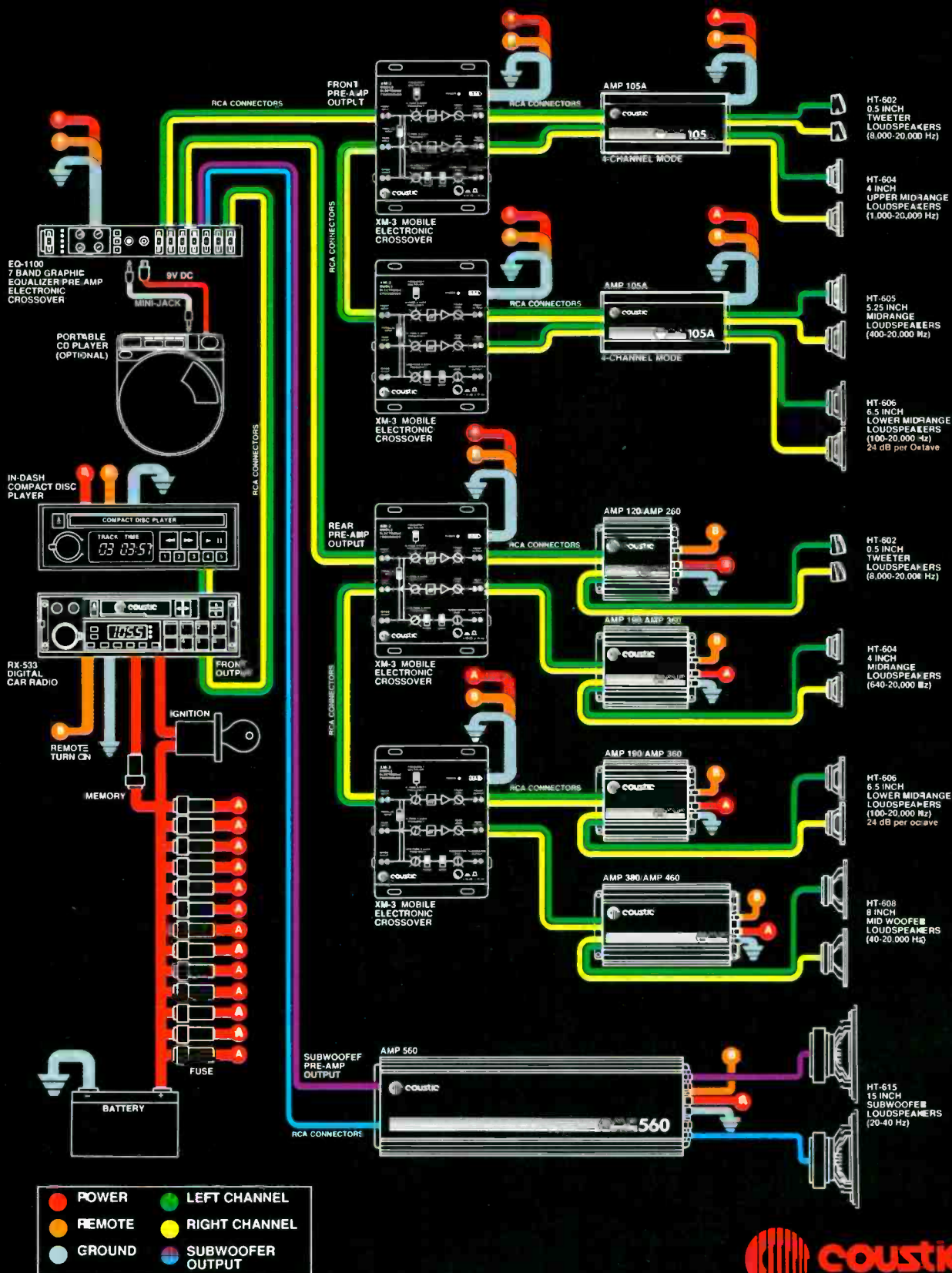
of the panel shows the instantaneous output (based on 8-ohm loads) for each channel, including a clipping indication. Knobs operate the three tone controls (bass, midrange, and treble), the balance control, and the volume control. A five-position switch selects either of the audio tape decks for listening or recording or connects them for dubbing in either direction. The supplied remote control operates most front-panel functions, and it can also control a compatible Carver CD player.

In addition to the audio and video input and output jacks, the rear apron of the receiver contains terminals for the supplied AM wire-loop antenna and a coaxial jack for a 75-ohm FM antenna feeder. A 75-to-300-ohm matching transformer is supplied for use with 300-ohm FM antennas. Insulated binding posts carry the speaker outputs, and two of the four AC outlets are switched.

The Carver Model 6250 is finished in dark gray, with knobs and

Double Scoop

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CIRCLE NO. 18 ON READER SERVICE CARD

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TEST REPORTS

buttons in a contrasting texture or shade of gray. It measures 19 inches wide, 18 inches deep, and 5½ inches high, and it weighs 35 pounds. Price: \$899. Carver, Dept. SR, 20121 48th Ave. W., P.O. Box 1237, Lynnwood, WA 98036.

Lab Tests

An hour of preconditioning at one-third rated power made the top of the receiver only moderately warm. With both channels driving 8-ohm loads at 1,000 Hz, the outputs clipped at 156 watts per channel. The clipping power level in-

creased to 175 watts into 4 ohms and 195 watts into 2 ohms. The dynamic power output was 248 watts into 8 ohms and 350 watts into 4 or 2 ohms. The total harmonic distortion plus noise with 8-ohm loads was a minimum of 0.03 to 0.04 percent just before clipping occurred, and with 4-ohm loads it was 0.05 percent. Driving 2 ohms, the minimum distortion was 0.04 percent from 50 to 100 watts, increasing to about 0.3 percent at 110 watts and 1 percent at 200 watts. The distortion varied only slightly with frequency. At the rated power

(into 8 ohms) it was typically 0.035 percent from 20 to 10,000 Hz, rising to 0.04 percent at 20,000 Hz.

With the tone controls centered, the frequency response of the amplifier was +0, -1 dB from 20 to 20,000 Hz. The bass and treble controls provided a maximum boost of 9 dB at 50 Hz and below and at 20,000 Hz. The maximum cut was 12.5 dB at 20 and 20,000 Hz. The midrange control's effect was at its maximum at 1,000 Hz but extended over the full 100- to 10,000-Hz range, with a ±6-dB control range.

The RIAA phono-equalization error was about +0.8 dB from 25 to 300 Hz, essentially zero from 1,000 to 10,000 Hz, and -0.7 dB at 20,000 Hz. The phono-preamplifier input termination was 47,000 ohms in parallel with 87 picofarads. The phono stage overloaded at about 135 mV over the 20- to 20,000-Hz range. The amplifier's sensitivity, for a reference 1-watt output, was 16 mV through a high-level input and 0.24 mV through the phono input, with respective A-weighted noise levels of -79 and -75.2 dB referred to 1 watt. The loudness compensation boosted only the lower frequencies (those below 100 Hz) by a maximum of 8 dB.

The FM tuner's usable sensitivity was 13.5 dBf (2.6 μV into 300 ohms). The 50-dB quieting sensitivity was 17 dBf (4 μV) in mono and 38 dBf (49 μV) in stereo. The distortion at 65 dBf was 0.14 percent in mono and 0.065 percent in stereo, with a noise level of -78 dB in mono and -67 dB in stereo. The capture ratio was 2.3 dB, and the AM rejection was a very good 72 dB. The alternate-channel selectivity of 65 dB was good, and the adjacent-channel reading of 13 dB was well above average. The muting and stereo/mono threshold level was between 35 and 38 dBf (31 to 44 μV). Pilot-carrier leakage into the audio was -70 dB, and the power-line hum level was undetectable (better than -90 dB).

The FM frequency response was +0.75, -0.35 dB from 30 to 15,000 Hz (almost all of the variation occurred between 8,000 and 15,000 Hz). Stereo channel separation was excellent, reaching a maximum of 55 dB at 400 Hz and narrowing to 40

FEATURES

- Magnetic-field power-amplifier section
- Inputs for CD, phono (MM), high-level auxiliary, and two audio tape decks
- Recording and playback switching for two VCR's
- Tape-recording selector and dubbing switch
- Asymmetrical Charge-Coupled Detector to reduce noise and multipath distortion on weak stereo FM broadcasts
- Sonic Holography circuit to add spatial dimensions to stereo image
- Tuner presets for six AM and six FM stations
- Auto or manual scan tuning
- Two pairs of speaker outputs, separately switchable
- Audio mute
- Switchable loudness compensation
- Bass, midrange, and treble tone controls
- Wire-loop AM antenna
- Coaxial jack for 75-ohm FM antenna; transformer supplied for use with 300-ohm antenna
- Four AC outlets (two switched)

LABORATORY MEASUREMENTS

- Tuner Section** (all figures for FM only except frequency response; measurements in microvolts, or μV, referred to 300-ohm input)
 - Usable sensitivity (mono):** 13.5 dBf (2.6 μV)
 - 50-dB quieting sensitivity:** mono, 17 dBf (4 μV); stereo, 39 dBf (49 μV)
 - Signal-to-noise ratio at 65 dBf:** mono, 78 dB; stereo, 67 dB
 - Harmonic distortion (THD + noise) at 65 dBf:** mono, 0.14%; stereo, 0.065%
 - Capture ratio at 65 dBf:** 2.3 dB
 - AM rejection:** 72 dB
 - Selectivity:** alternate-channel, 65 dB; adjacent-channel, 13 dB
 - Stereo threshold:** 35 to 38 dBf (31 to 44 μV)
 - Pilot-carrier leakage:** 19 kHz, -70 dB; 38 kHz, -68 dB
 - Hum:** less than -90 dB
 - Stereo channel separation at 100, 1,000 and 10,000 Hz:** 49.5, 53.5, and 41 dB
 - Frequency response:** FM, 30 to 15,000 Hz +0.75, -0.35 dB; AM, 20 to 4,000 Hz +1, -6 dB
- Amplifier Section**
 - 1,000-Hz output power at clipping:** 156 watts into 8 ohms, 175 watts into 4 ohms, 195 watts into 2 ohms
 - Clipping headroom (relative to rated output):** 0.96 dB (8 ohms), 0.97 dB (4 ohms)
 - Dynamic power output:** 248 watts into 8 ohms, 350 watts into 4 ohms or 2 ohms
 - Dynamic headroom:** 3 dB (8 ohms), 4 dB (4 ohms)
 - Maximum distortion (20 to 20,000 Hz into 8 ohms):** 0.045% at 125 watts, 0.045% at 62.5 watts, 0.04% at 12.5 watts
 - Sensitivity (for a 1-watt output into 8 ohms):** auxiliary/CD, 16 mV; phono, 0.24 mV
 - A-weighted noise (referred to a 1-watt output):** auxiliary/CD, -79 dB; phono, -75.2 dB
 - Phono-input overload:** 133 to 141 mV from 20 to 20,000 Hz
 - Phono-input impedance:** 47,000 ohms in parallel with 87 pF
 - RIAA equalization error:** +0.9, -0.7 dB from 20 to 20,000 Hz
 - Slew factor:** greater than 25

TEST REPORTS

dB at 30 Hz and 35 dB at 15,000 Hz. The AM frequency response was +1, -6 dB from 20 to 4,000 Hz.

Comments

The Carver Model 6250 proved to be an excellent receiver, superior to most in performance, features, and power capability. Except for the capture ratio, which was at least adequate, its FM performance was well above average, and the AM tuner's frequency response extended substantially beyond the upper limits of most AM tuners (voice sibilants were clearly audible, a rare quality with AM reception). The AM reception was also notably free of buzzing noises from power-line fields, a common problem with receivers using ferrite-rod AM antennas. In general, the receiver gave the impression of quietness combined with a thoroughly clean and smooth sound quality.

In addition to its high power output, the amplifier section is very rugged. Unlike a number of other high-power amplifiers that are not rated for 2-ohm operation, the Model 6250 did not blow fuses or output transistors when we drove it to clipping into a 2-ohm load. The

distortion increased at the clipping point, but the waveform rounding was gentle, and there were no obvious signs of distress from the receiver.

Although we made no measurements of the performance of the Sonic Holography circuit, in listening tests it appeared to operate as effectively as it does in Carver's 4000T preamplifier. The performance of the Asymmetrical Charge-Coupled Detector was more ambiguous. With most signals its benefits were not required, and there were no audible effects from switching it on. With a few signals that had audible hiss, switching on the ACCD drastically reduced the hiss, although we could sometimes hear the noise "pumping" with program level changes. Unfortunately, I have few stations in my area that are candidates for the ACCD treatment. Under other receiving conditions, with more marginal stereo signals available, it might have performed to better advantage.

In any case, the Carver Model 6250 is a lot of receiver—powerful, easy to use, and highly versatile. It is a good value in its price range.

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"... Heh, heh, heh! Forgive my laughing, sir, but one doesn't actually listen to these units—one just talks about them."



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JOOK LEUNG

AUDIOSOURCE EQ TEN EQUALIZER/ANALYZER

Julian Hirsch, Hirsch-Houck Laboratories

THE AudioSource EQ Ten is a versatile twelve-band graphic equalizer and real-time spectrum analyzer with a built-in pink-noise generator and a separate electret microphone. It is furnished with a wireless infrared remote control that duplicates most of its front-panel controls. In addition to the typical equalizer functions of modifying program or loudspeaker response characteristics to suit the listener's taste, the EQ Ten is capable of automatically equalizing (flattening) the combined frequency response of a room and a speaker system in a few seconds at the touch of a button.

Most of the individual frequency bands of the EQ Ten are spaced at octave intervals; the three lowest frequencies are somewhat less than an octave apart. The gain in each band is set by its own center-pivoted control button, located directly below its amplitude display,

which adjusts the gain in 2-dB increments over a ± 12 -dB range. The setting in each band is indicated by the vertical position of a red LED; a green LED indicates the center (0-dB) setting. Two additional light columns show the overall level of each channel.

The EQ Ten's display, which has two brightness settings, can be switched to show either the equalizer response or the frequency spectrum of the program. In the spectrum mode, a PAUSE button causes the peak value in each band to be held for 3 seconds or until a higher value is sensed in that band. If the button is held in, the entire display is frozen as of that moment, allowing a detailed examination of the program spectrum.

The EQ Ten is designed to be inserted into a system through a tape-monitoring loop, and it has its own input and output jacks for two tape decks. Front-panel buttons al-

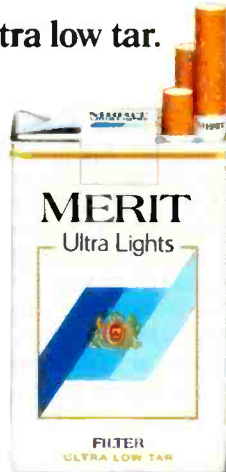
low a signal to be equalized either before or after it is recorded, and two decks can be cross-connected for dubbing from either one to the other. The signal can be monitored from either the input or output of a tape deck or directly from the line inputs. A REVERSE button allows an equalized tape to be played back without further equalization.

To equalize the entire system automatically, one channel at a time, the supplied microphone (which has a 15-foot cable) is placed near the normal listening position and plugged into a front-panel jack on the EQ Ten. Two buttons switch on the microphone amplifier and the pink-noise generator, whose output replaces the normal line-input signal. The EQ-L (left) button is pressed, then AUTO-EQ. Normally, it takes about 10 seconds to complete the equalization for that channel, and the process is repeated, using the EQ-R button, for the right channel. The resulting equalization data can be saved in one of the four memories of the EQ Ten, from which the settings can be recalled at any later time. The equalization curves for both channels, which are usually somewhat different, are stored and recalled simultaneously.

Over-achiever.

This is an extremely ambitious cigarette. Even though it is an ultra light, it promises to deliver a richer, more satisfying taste than you'd ever expect at such low tar levels. And judging by the fact that it has quickly become one of America's fastest growing brands, Merit Ultra Lights is fulfilling that promise. Enriched Flavor™ is the reason why. Only Merit has it. So raise your expectations of ultra low tar. Switch to Merit Ultra Lights.

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Kings: 5 mg "tar," 0.5 mg nicotine av. per cigarette by FTC method.

TEST REPORTS

The EQ Ten has two pairs of level adjustments. One, marked SEN, varies only the sensitivity of the display to center a change in the ± 12 -dB display range; it does not affect the signal level going to the amplifier. That function is assigned to the VOL(ume) buttons, which should be set so that using the equalization does not change the average listening volume materially. At its maximum volume setting, the EQ Ten is rated to achieve unity gain (0 dB).

A FLAT button on the panel instantly restores a flat response in both channels for convenience in judging the effect of the equalization, which can always be restored by touching the appropriate memory button. The memories should retain their information indefinitely, even when the unit is turned off, as long as the EQ Ten is connected to a powered AC source, such as an unswitched outlet on an amplifier or receiver.

The AudioSource EQ Ten is 16½ inches wide, 8¾ inches deep, and 3½ inches high. It weighs 7¾ pounds. Price: \$399.95. AudioSource, Dept. SR, 1327 N. Carolan Ave., Burlingame, CA 94010.

Lab Tests

The maximum gain of the AudioSource EQ Ten was exactly 0 dB, as rated, and its maximum input/output voltage (without clipping) was 3.9 volts (rated 4 volts). At a 1-volt output, the 1,000-Hz distortion was 0.12 percent (rated 0.008 percent). The A-weighted noise level was a very low -109 dB referred to a 0.5-volt level (rated -93.7 dB). The output of the built-in pink-noise generator was 140 millivolts (rated 150 mV), and its spectrum

conformed closely to that of true pink noise, whose amplitude increases by 3 dB per octave with increasing frequency.

The center frequencies were close to their rated values. Although many of the bands came close to equaling the ± 12 -dB-rated adjustment range, five or six of them could only develop a 10-dB boost, and all were limited to a maximum cut of 10 dB. We noted that the display for each band has only eleven LED's (five for boost, five for cut, and one in the flat position), which suggests that the EQ Ten may have been originally designed for a ± 10 -dB range, but the difference is insignificant for the intended application of the equalizer.

With all bands set flat, the frequency response was down 1 dB at 17 and 22,000 Hz. Response adjustments in the higher frequency bands had an appreciable effect at ultrasonic frequencies (for example, there was a boost of 9 dB at 80,000 Hz when the 8,000-Hz band was set for maximum boost). Although this never caused any problem in our use of the EQ Ten, it could conceivably create high-frequency overload under certain conditions.

Comments

The EQ Ten's most noteworthy feature, especially for an equalizer so modestly priced, is the AUTO-EQ function. Computerized equalizers have been available for a number of years, notably from dbx, but at several times what the EQ Ten costs. Although it lacks some of the features of the higher-priced products, its capabilities are probably better suited to the needs of the typical hi-fi enthusiast.

The idea of equalizing speakers and room simultaneously to produce a flat frequency response is appealing, especially when it can be accomplished in a few seconds at the touch of a button. Within limits, the AudioSource EQ Ten can indeed do this—perhaps not as accurately as a more expensive unit, but certainly more accurately than most people can manage by manually adjusting a graphic equalizer. By itself, however, automatic equalization rarely results in a sound that is subjectively "flat," no matter how precisely it is accomplished.

Essentially, equalization is an attempt to flatten a system's room response, which is largely a function of the speaker's acoustic power output as modified by room absorption and resonances. But a flat response at the speakers usually results in a response that is *not* flat in the listening area forward of the speakers. I have never heard a genuine improvement in the sound of a system as a result of flattening its measured response *at the listening position*—the listening process is far too complex for such a simplistic approach. In this respect, the EQ Ten was no exception.

The EQ Ten's computer-derived equalization curve can easily be seen on the display and correlated with what is being heard. A little experimenting with manual adjustment of the equalizer soon indicates how to correct the response for the listening position. The whole process is far swifter than manual equalization from scratch, and once the AUTO-EQ response has been modified to achieve the desired results, the final curve can be memorized in place of the computer-derived one.

Apart from its AUTO-EQ feature, the AudioSource EQ Ten offers above-average versatility as a straightforward hi-fi equalizer with extensive pre- and post-equalization taping functions and dubbing configurations. Despite a multitude of buttons, it is not difficult to use, although careful study of the instructions and hands-on practice are essential. Its multiple memories are also a highly desirable feature. Altogether, an excellent value.

Circle 144 on reader service card

FEATURES

- Center frequencies 25, 40, 63, 100, 160, 250, 500, 1,000, 2,000, 4,000, 8,000, and 16,000 Hz
- Control and display range of ± 12 dB
- Display modes for instantaneous response, momentary peak hold, and continuous peak hold
- AUTO-EQ function for computer-derived flat response at listening position
- Memories for four sets of frequency-response curves (two per channel)
- "Flat" response restored at touch of a button
- Built-in pink-noise generator (frequency response 20 to 20,000 Hz ± 3 dB)
- Infrared remote control
- Omnidirectional electret-capacitor microphone

VIDEO HI-FI

THAT'S ENTERTAINMENT!

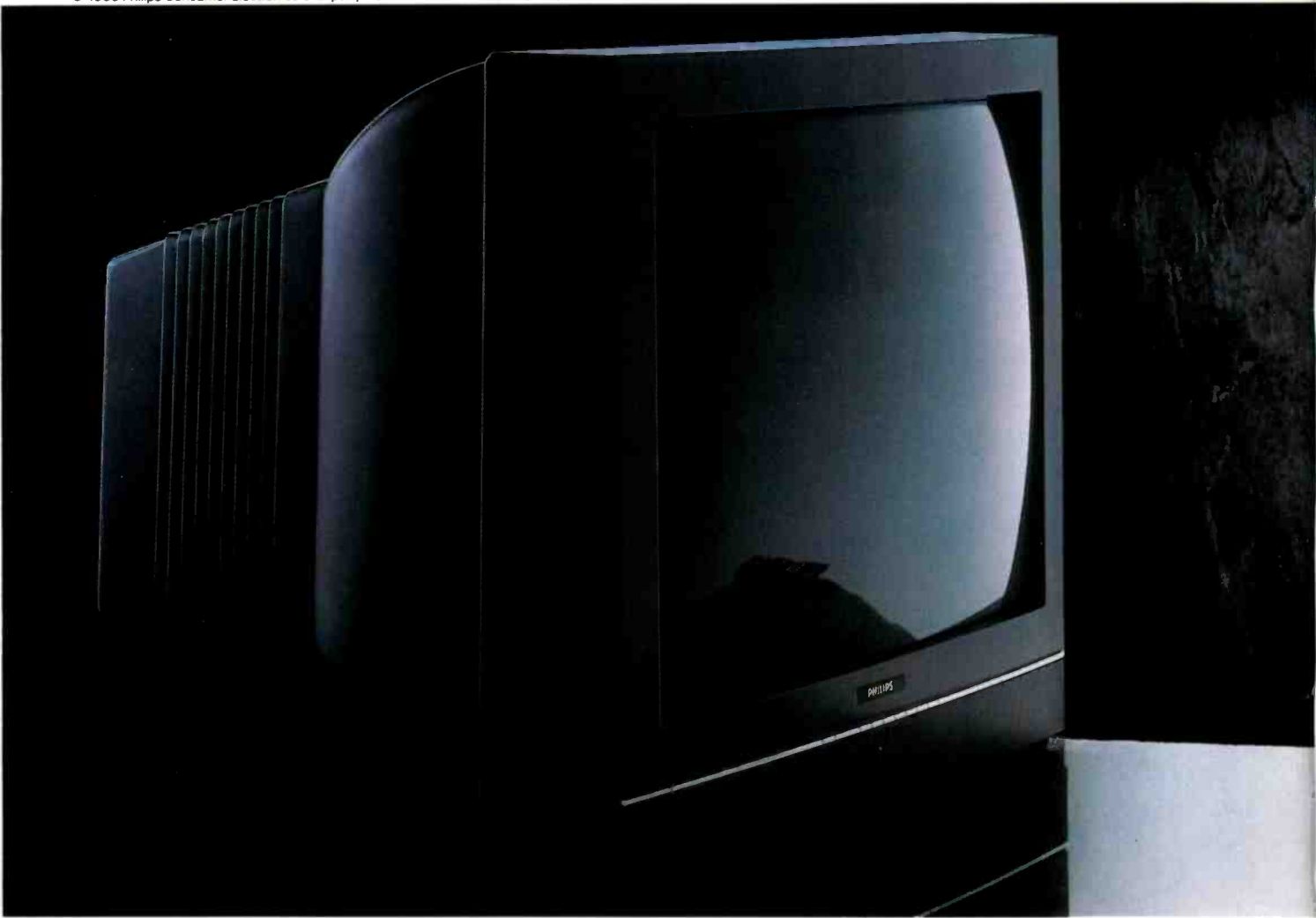


A GUIDE TO QUALITY VIDEO FOR THE AUDIO ENTHUSIAST

A Special Advertising Supplement Produced for

Stereo Review

BY BRUCE APAR



27" model 27J245 with 8-Video inputs, 2.5 megabytes of memory, S-Video input, Variable audio outputs. Winner of E.I.A.'s "Innovations '88" design and engineering award. 31" model 31J460 also available.

PHILIPS IDTV. A SUPERIOR MONITOR BY DEFINITION.



No matter how good your conventional color television is, our IDTV monitor receiver is superior. By far. Because Philips IDTV (Improved Definition Television) will show you an image that has greater accuracy, better definition and less noise than any available today.

■ Superior technology. Conventional television and monitors display $262\frac{1}{2}$ scanning lines every $1/60$ th of a second to "paint" the image on the screen. With Philips non-interlace technology, the scanning rate is doubled to 525 lines. As a result, scanning lines are eliminated and vertical resolution is improved by 40%. And Philips patented "Median Filter Algorithm" overcomes distortion typically associated with other double scan systems.

Plus you can dial down video noise from broadcast or direct video sources digitally by up to 12dB for a cleaner image with significantly greater video noise

reduction than any currently available. And our revolutionary digital field comb filter provides up to 480 lines of horizontal resolution detail.

■ Superior features. With Picture-In-Picture (PIP) and dual tuners built in, two programs can be watched simultaneously. PIP also allows previewing up to nine channels at once on the screen. "Still Picture" freezes images that otherwise would be missed. Our 49-button Philips LCD/Learn Uniremote also controls most TVs and any brand of VCR, cable or audio product.

Throughout the world, Philips has long set the standards for audio and video performance. We continue our leadership in digital technology with Philips IDTV—the highest standard in today's television technology.

To appreciate IDTV's superior definition, call 1-800-223-7772 for your nearest Philips video specialist.

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PHILIPS

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Because laserdisc quality lasts and lasts. And now for just \$24.98* you can start building your laserdisc library with your favorite movies. Choose from newly released home video sensations — like **BEETLEJUICE** and the **DEAD POOL**. And coming soon, the contemporary classic — Stanley Kubrick's **A CLOCKWORK ORANGE**, newly remastered, digitally processed, and now in its original theatrical aspect ratio. Plus dozens of other must-have laser titles from the Warner Home Video library, now collectively priced at \$24.98* each.

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NOW SEE/HEAR

**EXPERIENCE
SOUND/SCREEN
EXCITEMENT**

YOU WON'T BELIEVE YOUR EYES OR EARS

You come home, drained from the work week, ready to relax. Click on the TV remote. Not in the mood for some so-so sitcom, you slip in something more interesting. Bruce Willis in *Die Hard*, served on a silver platter, up on the big videoscreen. Suddenly, you're surrounded. You're not merely watching TV. You've been pulled in to a dynamic field of energy that leaves you smiling and rested. You've experienced the super high fidelity of home video's new image and sonic presence. It's called Video Hi-Fi. Now that's entertainment!

By joining forces, hi-fi audio and video components have forged a singleness of purpose—total entertainment that brings home the sight and sound spectacle of a movie theater or live event.

New media such as CD-Video and enhancements like Dolby Surround sound have silenced those critics who once didn't suffer gladly the sound of video.

There's even the romantic notion that big-screen images can exist in the eyes and ears of the beholder. "The effects, ambience and multi-dimensional atmosphere which the surround channel provides," according to Dolby Labs, "enhances the visual experience to such a degree that it gives one the illusion that the image is larger."

EYE-FIDELITY PICTURES

Ever try driving with your ears plugged? Quite unnerving. Instead of driving, do it while watching TV. Then again, don't bother. Because unless your videoscreen is wired for hi-fi stereo sound, you are watching TV with your ears plugged.

As TV pictures have moved closer to razor-sharp eye-fidelity, their accompanying sound has remained ear-itatingly inferior. The electronic imbalance in sound/screen quality results in a chemical imbalance in the viewer's brain. Distraction sets in faster as the attention span shrinks.

For the past 40 years, we've been subject to this sort of sensory deprivation. Compared with the video picture you see, typical TV sound is still in the dark ages.

FROM DEPRIVATION TO REVELATION

Stop staying unenlightened. Come to your senses and sample the marvels of Video Hi-Fi waiting for you in the new generation of TV monitors, super VCRs, laserdisc players, surround sound components and more. You'll see and hear a whole new world of wonders that is nothing short of... well, sense-ational.

It doesn't take a spec-spouting purist to enjoy the sensual pleasures that pour forth from a multimedia center. Just don't expect every single piece of gear to excite friends and impress people. Untrained eyes or ears may not immediately appreciate the detail in a Super VHS picture or the tonal texture of stereo TV sound.

When these perform in ensemble, though, home viewers will be held in thrall, perched at the leading edge of a new age in home entertainment.

There is an aura that attends the Video Hi-Fi

experience. Stereo TV is a first step, a building block. Moviegoing engages us in ways watching TV seemingly cannot because it's a unique chance for personal reflection in the shared context of a social event. More viscerally, the modern movies' main attractions are: 1) the size, shape and high definition of the widescreen image, and 2) the high fidelity and surround sound of the Dolby Stereo system popularized in 1976 with *Star Wars* and used extensively since in over 1600 movies, on music videos and even in TV telecasts such as the Super Bowl.

NEW WAVE ELECTRONICS

The new wave of home electronics is able to recreate the acoustical ambience and visual embrace that give commercial entertainment its power and its gloss. Better yet, certain of Video Hi-Fi's features provide what movie theaters certainly can't—myriad remote-controlled entertainment choices at your fingertips, and multi-room capability for family members to enjoy different audio and video selections, at the same time.

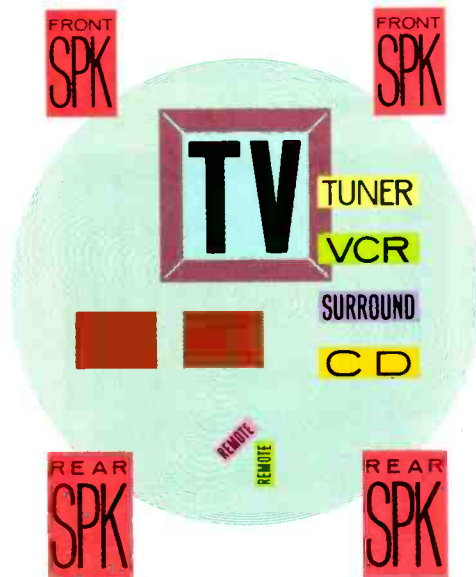
Engineering ingenuity has conjured up high-performance mini-theaters for the home unimaginable a few years ago. There's Dolby Surround everywhere you turn, in receivers, amplifiers and TV monitors. High resolution TVs, VCRs and laserdisc players approach studio-quality monitors. Even big-screen TVs are sharper than ever. Selected movies are showing up on tape and disc in the same seductive shape (widescreen) they exhibited in movie houses.

The best is still ahead. When the 1990s arrive, so will high definition television (HDTV), with video as vivid as 35 mm still or motion pictures. There's even the prospect TV screens will be extended in the more dramatic shape of the silver screen. With Dolby Surround and laser leading the charge of Video Hi-Fi technology today, this special minizine is designed to change the way you look at home entertainment.

BE IMAGE CONSCIOUS

Horizontal resolution is a standard-reference measurement that denotes the relative picture quality of a video source. The more lines of resolution, the better the image to the naked eye. Note that 600 lines is comparable to professional studio monitors.

SOURCE	LINES
Standard VCR	240
TV broadcast	330
8mm video (metal tape)	400
Super VHS (tape)	400+
LaserVision (disc)	400+
ED Beta (tape)	500
High resolution monitor (capacity)	500-600



With sound in the round this is the very model of a modern multimedia room.

STOP, LOOK & LISTEN

PRODUCT SHOWCASE



THEATER IN SURROUND

Denon's Integrated Surround A/V Amplifier (AVC-2000, \$1000) has Dolby Pro Logic processing and three amplifiers to drive five channels in front (65 watts/ch), rear (15 watts/ch) & center (15 watts). Six surround modes. 3-position picture Enhancer switch for detail, sharpness. Fourteen audio and seven audio/video inputs, nine audio and four video outputs. S-Video connectors for (two) in and (three) out systems. Programmable 192-function remote controller for all Denon models. Variable three-stage digital delay. On-screen display.

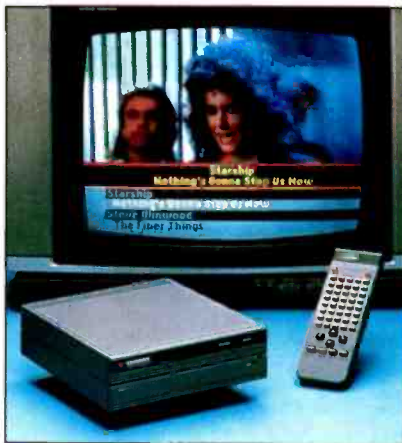
GET IN REMOTE CONTROL

The *Luxman* Remote Control Center (TP-117, \$1,800) is a tuner with two preamps that permits two-zone operation in several areas of a home. Each zone plays an independent program source. (eg, a CD can be heard in the living room while a surround sound video is playing in the family room). Using two or three TP-117 units creates up to six zones for up to 30 rooms, each zone having the same independent source selection and volume control. Four audio/video input jacks. Compatible *Luxman* components include infrared remote sensor for each room (RC-501, \$100), 50 watt power amplifier (M-113, \$600), remote keypad (RTP-117, \$60), and remote repeater (RC-503, \$150), which allows the RTP-117 remote to control any non-*Luxman* equipment.



MEET F.R.E.D. THE DECODER

The *Recoton* MTS Stereo TV Decoder, nicknamed F.R.E.D. (V624, \$179), enables almost any non-stereo TV or VCR to receive programs telecast in stereo, and mono programs in simulated stereo. It connects to the audio inputs of a hi-fi system, with its special probe attached to the TV or VCR cabinet. Built-in 12 watt amplifier. Separate volume, balance, bass & treble controls. Coaxial cable TV connectors. Second audio program (SAP) function. Dynamic Noise Reduction (DNR) button & dbx circuitry. Headphone jack. Auxiliary input for VCR playback, dual stereo output jacks. MPX input jack for stereo-ready TVs. Pictured is F.R.E.D. II. On F.R.E.D. III (\$199) are separate volume, balance, bass & treble slide controls.



A LOT OF VCR FOR THE \$\$\$

Plenty of value is added to this hi-fi MTS stereo VCR from *RCA* (VR630HF, \$699). The machine has four heads for improved special effects. Simulcast recording (for FM tuner reception of TV telecasts in stereo). On-screen displays of time, channel, day and date, tape counter. Remote also controls certain *RCA* TV models. Index search. 24-hr express recording for last-minute programming on the run. Auto rewind & shut-off. Manual recording level adjustment. Remote tracking control. 120-ch cable quartz tuner. HQ picture. Headphone jack. *RCA*'s model VR640HF (\$899) is similar with Super-VHS added.



SOUNDS LIKE ... 3-D TV

It may be a mouthful, but the *Toshiba* 27-in. FST Color TV with *Carver* Sonic Holography System (\$1799.95) is also an eye-ful and earful. Developed by a well known audio maker, the patented sound system (7 watts/ch with 10 watt subwoofer) puts you smack in the middle of all the action. MTS stereo reception with dbx noise reduction. 181-ch cable compatible tuning. Unified 46-key remote. S-Video, two RF, multiple audio/video inputs. 520 lines resolution. *Carver* sound also on 30-, 46- and 52-in. *Toshiba* models.



HOME VIDEO JUKEBOX

Designed to make home editing as slick and easy as you please, *DirectEd Plus* (\$549) is an ingenious add-on from *Videonics*. It's used with two VCRs (second can be a camcorder) and is complete with titles, graphics, the works. Used in tandem with *DirectEd* is *CollectEd* (pictured, \$79), which automatically indexes (by title & artist) and retrieves music video selections you've recorded. No guesswork, no awkward card file. Your own music library is just a remote key away. New is *ProEd* (\$995), which hooks up to editing VCRs with remote control jacks.

SUPER TAPE

Sure you can use regular VHS blank tape on a Super-VHS VCR, but you won't be recording the very high frequencies that are the hallmark of an S-VHS picture. For that you need a special grade cassette. Super VHS tape is available from *TDK* and *Maxell* among others, with a list price in the \$20-plus range. *Maxell* also makes a premium tape for VCR hi-fi recording. Called *XL Hi-Fi*, it is the top of *Maxell*'s line of videocassettes.





RZ-7000 Computerized Stereo A/V Receiver

CRAFTSMANSHIP

We put so much into our new RZ-7000 Computerized Stereo A/V Receiver, we thought it deserved a new, sleek look on the outside, too. It deserves more because it provides a better man/machine interface that makes every operation simpler and more logical. Like the station call/equalization memory system: not only can you preset stations and equalizations, you can give them four-character names for quick and easy recognition. You can even make an equalized setting part of the station preset.

And it deserves more because it has everything you need to incorporate audio and video components into a single versatile system.

Don't you think you deserve the RZ-7000?



The RZ Series of receivers consists of the RZ-7000, RZ 5000, RZ-3000 and RZ-1000.

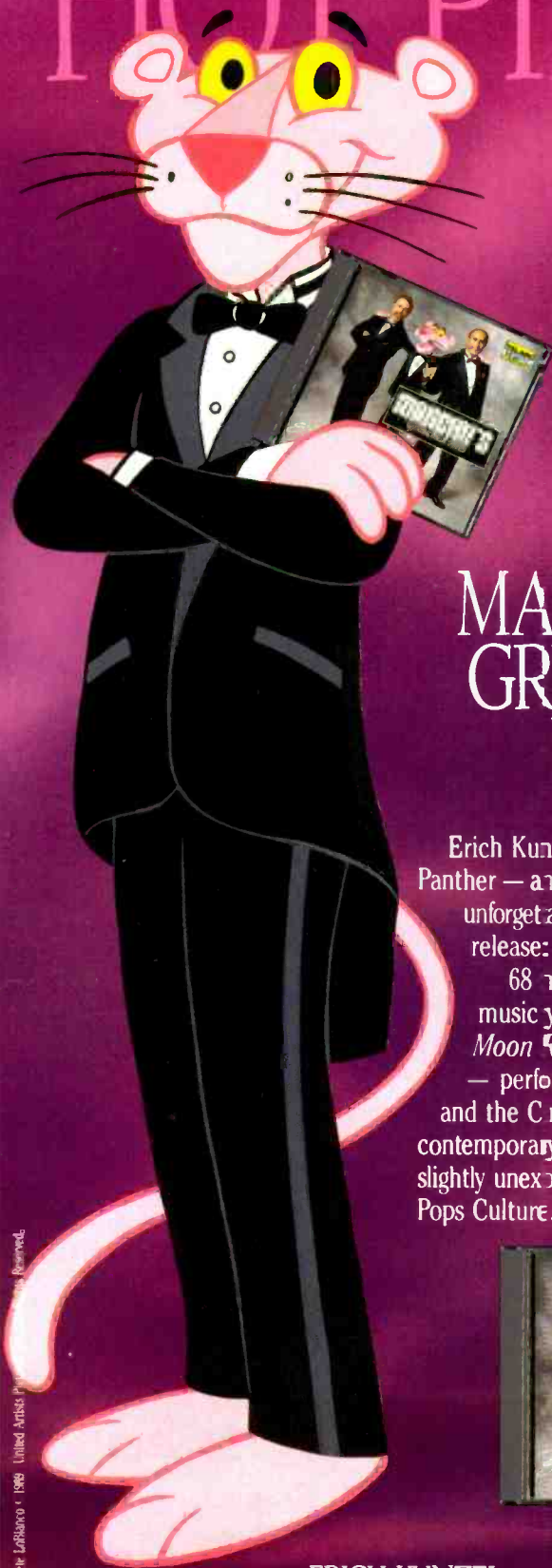


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68 minutes of the Mancini music you love. 24 hits — from *Moon River* to *The Thorn Birds* — performed as only Erich Kunzel and the Cincinnati Pops can. With a contemporary flair. Exciting. And slightly unexpected. We call it The New Pops Culture. You'll call it fantastic.



EVERYTHING YOU
HEAR IS TRUE.



ERICH KUNZEL
CINCINNATI POPS
THE NEW POPS CULTURE

Enjoy more than 20 Kunzel titles on DDD compact disc; most available on TDK cassette.

WHAT'S THE BUZZ

CD-Video

Compact discs with 5 min. of digital sound video and 20 minutes of digital audio-only. Designation also used by Polygram for all its digital-sound videodiscs.

Digital Stereo

Compact disc (CD) quality sound used in 8mm VCRs and on certain video laser-discs.

Dolby Surround

Modified home version of Dolby Stereo heard in movie theaters. Four channels encoded as two for stereo-compatible (two channel) playback. Using Dolby or other patented surround circuitry, viewer can hear four channels recorded on almost 2000 movies and music programs, and some TV programs. Time delay between front and rear channels adds to surround effect. Rear channel for special effects & background music.

Dolby Pro Logic

Advanced version of Dolby Surround that more faithfully recreates theater-like environment. Uses center channel output (requiring separate amp) for dialogue localization. "Steering logic" moves sounds around for better directionality, creating continuous circle of sound.

Hi-Fi

Second only to digital audio in quality, this is stereo designation used in best VCRs. Cannot be recorded over without erasing video. (On 8mm, hi-fi refers to mono sound).

LaserVision (LV)

This mark on equipment or videodiscs indicates full compatibility with other laser optical video products bearing same mark.

LaserDisc (LD)

When used with capital L and D, a trademark of Pioneer Corp. Also used in lower case as generic for LaserVision format.

MTS Stereo/SAP

Multichannel tv sound (MTS) is process used to broadcast TV programs with stereo sound. Second audio program (SAP), part of MTS TVs, is mono channel used for additional audio track such as second language translation.

Super VHS (or S-VHS)

Advanced videotape picture quality that surpasses broadcast TV for high-performance recording and playback of videocassette images. (Also ED Beta, from Sony, for Extended Definition TV pictures).

KOSS TAKES THE KORDLESS STEREOPHONE TO NEW HEIGHTS, WIDTHS AND DEPTHS.

KOSS' JCK/300: THE SECOND GENERATION OF THE KORDLESS STEREOPHONE.

Ever since Koss invented the SP/3 stereophone over 30 years ago, the company motto has been the same: If at first you *do* succeed, try, try again.

So even when the JCK/200 Kordless Stereophone became one of Koss' biggest successes, research and development continued. The result is the finest Kordless Stereophone system available today: The Koss JCK/300.

IT CONQUERS INNER SPACE WITH FOUR TIMES MORE POWER.

At the heart of the JCK/300 is a new transmitter with up to four times more power than conventional infrared headphone systems. The transmitter consists of two pieces: A modulator and an emitter panel. The two may be snapped together, or the emitter panel can be hung separately for maximum dispersion, and connected to the modulator with an accompanying cable.



Daisy-chaining emitter panels allows Kordless listening in several rooms.

The result of all that power is three-fold. With more signal, infrared interference is significantly reduced, effectively increasing the signal-to-noise ratio. Secondly, reception is improved, particularly in fringe areas where signal loss might otherwise be a problem.



And thirdly, it is now possible to enjoy the Kordless Sound Of Koss in an even larger room than ever before.

Or perhaps that should be "rooms." Because Koss has made it possible to "daisy chain" up to four additional emitter panels together by cable so that you can enjoy the JCK/300 wherever the music moves you.

Whether it's watching a music video on the living room TV, or settling back to the sound of a CD in the bedroom.

GREAT SOUND IN, GREAT SOUND OUT.

To fully capitalize on that improvement in transmission, Koss developed better stereophones. The JCK/300 headset contains two new transducers that supply a smoother, flatter response.



New JCK/300 transducers provide smoother response.

And there are additional creature comforts, like separate level controls for each channel. Of course, no amount of description here can serve as a substitute for an actual audition. That's why Koss encourages you to try the new JCK/300 at your favorite audio or video store. And discover a Kordless listening experience of incredible proportions.



Dual volume controls permit right and left channel adjustment.

Koss Stereophones, 4129 N. Port Washington Rd., Milwaukee, WI 53212. Koss Limited, 4112 S. Service Rd., Burlington, Ontario L7L4X5. Koss-Europe: CH-6855, Stabio-Switzerland.

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For more information call 1-800-USA-KOSS.

CIRCLE NO. 55 ON READER SERVICE CARD



PRODUCT SHOWCASE

FIVE FEET OF TV ▲

A screen measuring five-feet diagonal in an oak veneer cabinet with folding doors is the focal point of this *Mitsubishi* stereo monitor/receiver. (The company's Diamondvision screens are a popular sight in sports arenas around the country). Auto-programmable channel memory scan tuning. A/B antenna switching (eg, for broadcast/cable). 181-ch cable tuning. On-screen display of time, channel, channel lock. S-Video input, variable/fixed stereo outputs, two video & stereo audio outputs. Video & tuner output. 560 lines resolution. Illuminated remote.



TV GOES TO PIECES ▲

High-end performance and design meet in the XBR Pro component TV system from *Sony*. Featured in the modular TV are a 25-in. monitor, MTS tuner (15 w/ch Amps) and a pair of APM speakers, with all functions remote controlled. Black matte finish & cubic design blend in well with comparable hi-fi gear. Matrix surround sound stereo. Direct video & stereo audio inputs, S-Video connectors. Variable audio & video/stereo audio outputs. 560 lines resolution. System is \$2,499.95, monitor alone is \$1,699.95. Also available are single-unit XBR Pro monitor/receivers in 27-in. (\$1,299.95) and 32-in. (\$2,699.95) screens.



"I'D LIKE A VCR WITH EVERYTHING ON IT" ▲

No digital effect is left unturned on *JVC's* deluxe Super-VHS VCR (HR-S8000U, \$1,600). It has a rare zoom function that enlarges any quarter of the picture to full-screen size. Multi-screen digital freeze, channel scan & strobe, plus solarization & mosaic patterns. Intro search sequentially calls up, scans past every recorded segment on any tape for visual table of contents. Four tape heads for optimum special effects. Hi-fi, MTS stereo sound. Variable-speed search, slow motion and still. Flying erase head for pro quality insert edits. Auto titling adds date, time and channel at start of recording. Index search. LCD programmable remote also controls TV volume. 181-ch cable tuning. Fixed & variable audio jacks and multiple video jacks. Later this year, *JVC* bows the HR-S10000, with even more advanced editing and other features.



DIGITAL SOUND ALL DAY LONG ▲

If you're forward looking and looking for another VCR, consider *Sony's* Video 8 PRO (EV-S800, \$1,950). The 8mm metal tape videocassettes are audiocassette size. PCM digital stereo recording in video mode, up to 24-hr digital recording on single tape in audio-only mode (with six 4-hr tracks). 99-position index to instantly find any selection. Jog shuttle dial on deck & remote for precise control of transport, other functions. MTS stereo cable tuner. Synchro edit feature with flying erase head, for use with camcorder or editing controllers. Two sets of video, audio outputs. Tape remaining indicator.



I WANT MY IDTV! ▲

With true high definition TV (HDTV) some years away, *Philips* harnessed HDTV research to bow improved definition TV (IDTV). The most visible difference in this digital technology is the virtual lack of scan lines seen on conventional sets, with a 40% improvement in picture quality. *Philips' 27-in.* IDTV (27J245SB, \$1,500) has two tuners with picture-in-picture that displays up to nine channels on-screen at once. Smart 49-key remote controls most other brand components. Surround sound (5 watts/ch). Variable audio out & S-Video connectors. On-screen channel display & lock-out. Sleep timer. Also available, 31-in. screen size with 10 watt/ch amp for surround sound, \$2,600.



DISC-O-RAMA ▲

Five—count 'em—five types of laserdiscs will play on *Yamaha's* optical disc model CDV-1000 (\$799)—12- & 8-in. video laserdiscs, 5-in. CD-Video and audio-only CDs, and 3-in. CD singles. Automatically differentiates digital-audio discs from laserdiscs with analog soundtracks. Random access program stores up to 15 video chapters or audio/video tracks, and plays in any sequence. Rear-panel output terminals for RF, auto-digital out & antenna input. Variable speed search, freeze frame & four-mode repeat function. On-screen cursor for menu prompts. Display of elapsed playing time. 425 lines resolution.

LOOK MA, NO HANDS

You don't have to flip over changing discs mid-movie with *Pioneer's* LD-W1 LaserDisc Player (\$1,700). The unique double-tray design precludes turning over or switching discs to continue watching a movie or other program. Jog shuttle dial on remote for precise scan & slow motion. Other special effects include still picture with sound, strobe motion with sound. Also two-way frame-by-frame still-step, instant search by frame or real time, dual-speed scan in full color, nine-step multi-speed play and six-mode repeat. Auto play of up to 20 chapters in any order. On-screen status display. Remote controls other Pioneer sets. *Pioneer's* top-of-the-line LaserDisc Player is the LD-S1, with single-disc play and a host of deluxe features, \$2000.





COMPROMISING WITH YOUR TAPE IS LIKE COMPROMISING WITH ANY OTHER COMPONENT IN YOUR SYSTEM.

Even the most advanced system is only as good as the tape you put into it. That's why Maxell has created XLII-S.

Its unique Epitaxial formula combines gammaferric oxide and cobalt ferrite for superior response at all frequency levels. The resulting superfine particles offer unprecedented clarity and brilliance. And make XLII-S the perfect tape for recording your most demanding sources.

So match your tape to the other components in your system and use only XLII-S from Maxell. Anything less is just kid stuff.



maxell
The Tape That Delivers
Higher Performance.



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America's Laser Disc Store

Since 1985

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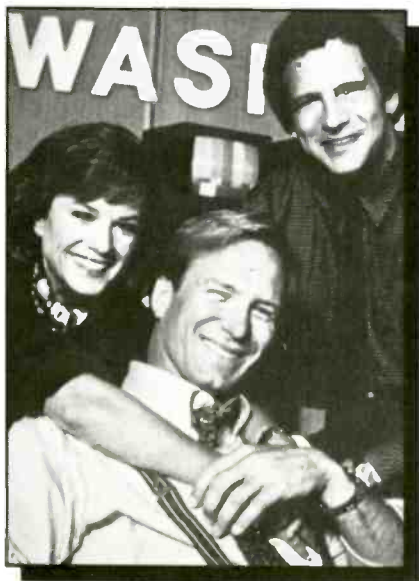
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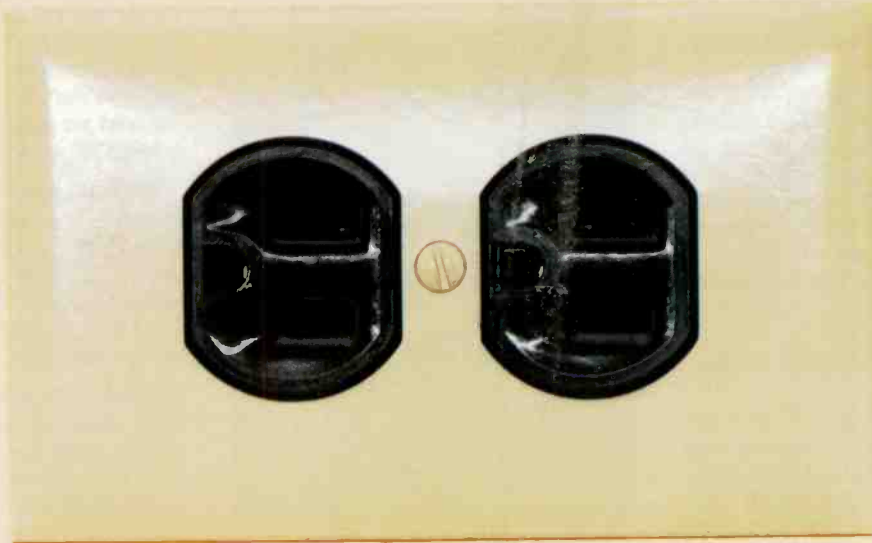


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THE SOUND OF MOVIES

**RICK CHACE
IS RE-RECORDING
HOLLYWOOD HISTORY
BY BRINGING MONO
MOVIES BACK TO LIFE
IN STEREO**

Film sound wizard Rich Chace is setting Hollywood on its ear with his patented processes that eliminate noise from older films and convert monaural soundtracks to stereo for theater, TV and video release. Far from being a gimmick, Chace's work has done wonders for over 100 movies including classics like *Gone With the Wind*, *Casablanca*, and *Yellow Submarine*. When lifelong jazz fan Clint Eastwood needed someone to restore Charlie Parker's original recordings for the soundtrack of *Bird*, he knew who to call.

Q. How did you end up working with Clint Eastwood on *Bird*?

A. We had done a number of Clint movies in stereo, starting with *Dirty Harry*. The word I got was that when Clint heard what we did he stood up from the couch and said, "That's terrific, we've got to do them all this way." About eight months before he started *Bird*, Sondra Locke (his wife), and his editor, Joel Cox, restored his 78 collection of jazz records. They used my equipment to clean the stuff up and put it on cassette, and gave it to him for his birthday. When he decided to do the movie, he came to me through Joel. He went to France and came back with original tape of Charlie's work. Some of the earliest tape recordings... paper tape.

Using our stereo processor, we were able to isolate the sax part and attenuate other parts enough that they were able to reorchestrate those other parts and let the sax part sit out front.

Q. You recently made *The Godfather* into stereo for TV broadcast. Wasn't that originally in stereo?

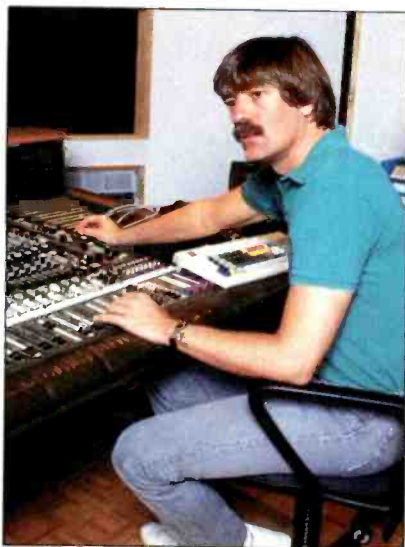
A. Everybody thinks everything made in the last 15 to 20 years was in stereo. That simply isn't true.

Q. How does your process differ from synthesized stereo?

A. Please don't compare me to that. I call it "fat mono." We have full surround. Our stereo shows up wherever you are in the room. It's very big so that even on small sets you hear it, and on big sets it's wonderful.

Q. What's the difference between watching TV in stereo and in regular TV sound?

A. If you press the mono button, you hear a sense of loss. When stereo comes in, you feel like you're getting something extra. Stereo gives you more involvement with the picture.



Sound virtuoso Rich Chace in the studio where mono becomes stereo.

Q. What was it like working on the restoration of *Gone With the Wind*'s soundtrack for its 50th anniversary this year?

A. A wonderful sound man at MGM, Scott Perry, went to the vaults and located some virgin, almost untouched separate sound elements that had never been played. We made them sound as good as they ever could have and a little bit better. You don't hear clicks and pops, there's almost no hiss level. And it sounds wonderful. They've used a brand new color print that came right out of the Technicolor camera. It looks new, and it sounds new. You can't believe this movie is 50 years old.

Q. Didn't you add stereo to the Beatles' *Yellow Submarine*?

A. Warner and I agreed we should replace the music in that with the real stereo from the record. We didn't know how bad the mono track was until they sent us over the negative and said, "Ok, make up stereo from this." It was distorted. When it came out, in 1968, the sound for movies had been the same since *Gone With the Wind*. Warner is an extremely sound-conscious company. They got a nice fresh Dolby mono copy of it they found in England. It was better by far and we made the stereo from that. So the soundtrack on the video is better than the movie ever sounded.

Q. What were some of your toughest projects?

A. *Bullitt* was a tough one, that car chase scene. I recommend it if you want to rent it. That took a

whole day to do. It was an event in itself. *Gone With the Wind* was the most challenging because it took so long, two months. Typical time is two weeks. We're dealing with a theatrical venue, so little errors that are infinitesimal in speakers six feet apart are going to be noticed severely in speakers that are 60-feet apart.

Q. How costly is your process?

A. If we don't have much work in the mono stage, about \$8,000. If there's a transfer involved and clean-up, it's between \$12,000 and \$15,000. The high end is around \$20,000, not counting *Gone With the Wind*, which cost the same as two movies in that range.

Q. Is your system patented?

A. Yes. We've been trying to get our name on the package, Chace Stereo, like Dolby Stereo. We have Dolby's blessing on this. We both end up compatible with each other, but I start with one channel and they start out with four.

Q. Have other directors besides Eastwood reacted to your work on their films?

A. Stanley Kubrick sent us a reel of *A Clockwork Orange* to see what we could do with it and we did it. He was surprised at how good it sounded. But he thought enough of it to call me from London and tell me that he liked it.

Q. What's next as far as the technology you work with?

A. Have you heard of *No Noise*? It's a group of people who broke away from George Lucas and started their own company. They came up with a computerized process that removes the noise from audio tracks without affecting the music or other material. We have the first one in L.A. We've been making them real quiet for a long time. This is a quantum leap. We're talking industrial strength, major state of the art.

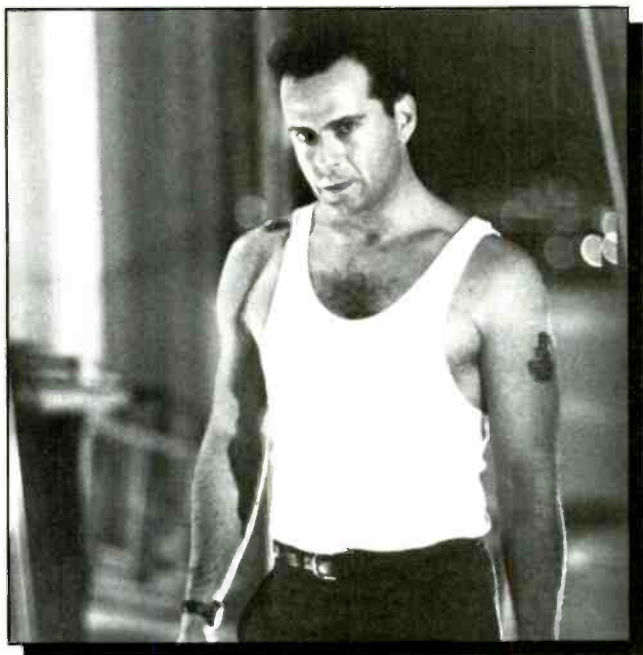
NOW PLAYING IN CHACE SURROUND

A sampling of movies available on videotape and/or disc:

Best of Dan Aykroyd (Warner)
Bullitt (Warner)
Dirty Harry (Warner)
East of Eden (Warner)
42nd Street (Turner)
Giant (Warner)
White Christmas (Paramount)
Yankee Doodle Dandy (Fox)
Yellow Submarine (Warner)
Swan Lake (Warner)
Gone With the Wind (MGM, fall 1989)
Rebel Without A Cause (Warner)

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FOX**
VIDEO



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A Fish Called Wanda

(Available the end of March)

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The Agony And The Ecstasy \$69.98
(CLV Letterbox version)

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Big \$39.98

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CIRCLE NO. 43 ON READER SERVICE CARD

ALL SYSTEMS GO

SUPER SETUPS THAT SOUND AS GOOD AS THEY LOOK



ROOMS WITH A VIEW

Electronics elegance is epitomized in this high-tech, high-rise apartment overlooking New York's Central Park. *Audio Command* of Rockville Centre, NY worked closely with owner Mark Terk and interior designer Scott Bromley. The result is a fully integrated multimedia entertainment system. Not pictured is a ceiling-mounted projection TV with a flat screen that pulls down in front of the built-in TV. Mr. Terk can independently control any of eight different A/V sources in any of four different areas or zones throughout the home via special microprocessor-controlled panels with alphanumeric read-outs. Each room has its own TV, and two of the control panels also adjust lighting. Says Terk: "I hate having buttons that don't do anything."

Photo by *Mike Grimaldi*.



SPEAKERS OF

PRICE OF ADMISSION \$10,000 to \$15,000
(cabinetry not included)

FEATURED PLAYERS *Kyocera*: R861 receiver, P811 cassette deck, PL701 turntable, DA 710 CX compact disc player, RC101/RT102 remote controller and terminal, *Pioneer* CLD-1010 LaserDisc player, *NEC* 965 hi-fi VCR, *NEC* 4650 46-in. projection TV, *Dahlquist* DQM-9 speakers, *Niles* speaker switchbox. Not pictured: six pair *Sonance* 3 speakers, 4 RS203 remote sensors.

SYNOPSIS Main components can be remote controlled via sensors in four rooms—master bedroom, kitchen, breakfast room and exercise room—where *Sonance* speakers are installed. Master bath also has speakers. Remote terminal controls all transport functions of electronics. Projection TV sound plays through stereo system, with speakers installed behind grilles at top of cabinet.

SECOND FEATURE The Shure Home Theater Sound (HTS) series of components are priced separately but designed to work together for optimum audio/video surround performance. The HTS models also are sold together as the



THE HOUSE



complete HTS Theater Reference System. For \$9,600 you get three signal processing amplifiers (100 w/ch each), a Dolby-compatible Acra Vector Logic Decoder, four speakers for left/right front and surround sound, a subwoofer, and a center channel speaker.

CREDITS Media installation by *Audio Encounters*, Dublin, Ohio. Photos by *Garrett White*.



MEET OUR COVER MODEL

PRICE OF ADMISSION Over \$40,000 (cabinetry not included)

FEATURED PLAYERS *Sony* 1040Q video projector (not pictured), *Draper* 100-in. (diagonal) screen, 2 *NEC* 20-in. color monitors w/ remote, *Proton* video tuner w/remote, 1 pair *B&W Matrix* speakers (front), 2 pair *ADS* speakers (surround), *Canton* speaker (center channel), *Canton* subwoofer, 2 *Adcom* 555 200-watt amplifiers, 2 *Adcom* 545 100-watt amplifiers, 1 *Crown* D-75 amp (for subwoofer), 1 *Adcom* tuner, *NEC* PLD-910 Pro Logic surround processor w/remote, *NEC* 8000 Super VHS VCR w/hi-fi sound & digital effects, *NEC* 965 Hi-Fi VCR, *Pioneer* CLD-3030 LaserDisc Player, *Denon* DCN-555 compact disc changer, *Audio Command* 9000 control center console, *GE* universal handheld remote. Not pictured: *B&W*, *ADS*, *KEF* speakers throughout house with built-in control panels, plus six outdoor *Rockoustic* Rocky Jr. speakers (33 speakers total); 3-jack headphone panel built into *Sony* projector/coffee table.

SYNOPSIS This is a 2-zone system, meaning the media room (shown) can be playing one audio/video source while a separate component is being used in one or more areas of the house. Each area has its own speakers and in-wall control panel that selects source, and controls on/off, local volume & transport functions of VCR, CD et al., and also readout of operating status. Coffeetable in media room has three



headphone jacks to enable private listening to three different sources (TV, CD, etc) for three people. Empty space at bottom right of equipment bank reserved for digital audio tape (DAT) recorder. Machines can be purchased in this country through professional audio retailers and other sources.

SECOND FEATURE Even going out to a movie can't beat this setup.

CREDITS Media installation by *Audio Command*, Rockville Centre, NY. Cabinetry by *Boos Custom Woodworking*, Plainview, NY. Design by *Langsam/Rubin Interiors*, Syosset, NY. Photos by *Mike Grimaldi*.



YOU JUST HAD TO BE THERE.

UNTIL NOW.

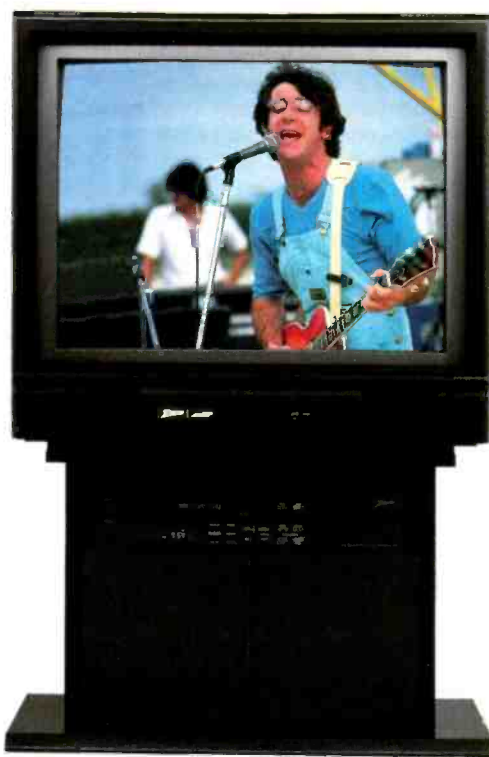
Woodstock. Buzzing with the presence of half-a-million people down on the farm for three unforgettable days of peace, love and rock and roll.

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*Diagonal measurement. © 1989 Zenith Electronics Corp.

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CIRCLE NO. 46 ON READER SERVICE CARD

PLAY TIME

PROGRAM NOTES ON SELECTED FEATURES & FEATURED SELECTIONS

OK, YOU'RE SURROUNDED

Look For the Dolby Label

If you buy or rent a cassette or disc of any film marked Dolby Stereo or Dolby Surround, the soundtrack will be encoded with Dolby Surround. The package will display one or both of these logos:



Since the use of Dolby Stereo is left to the artistic discretion of each director, material recorded in the surround channel varies from film to film.

A cassette or disc without one of these markings but with the "double-D" Dolby logo may or may not contain Dolby Surround sound. The logo will look like this:



You may also see just the words "Stereo Surround" or "Ultra Stereo." These are non-Dolby systems that nonetheless can be enjoyed with a surround sound decoder.

For a list of movies in Dolby Stereo, contact Dolby Labs, 100 Portero Ave., San Francisco, CA 94103-4813, (415) 558-0200. For a list of movies in Ultra Stereo, contact Shure HTS, 222 Hartrey Ave., Evanston, IL 60202-3696, (312) 866-2608.

New and Coming Soon

Selected feature films available on tape and disc in Dolby Stereo.

A Fish Called Wanda (Fox) Try to find someone who didn't like it.

Big (Fox) Fun and funny. A big reason Tom Hanks is Hollywood-hot.

Bird (Warner) The life of jazz great Charlie Parker.

Beetlejuice (Warner) Michael Keaton in surprise comedy-horror hit of 1988.

Bull Durham (Orion) Kevin Costner romances baseball & Susan Sarandon.

Crocodile Dundee II (Paramount) One g'day deserves another.

Imagine: John Lennon (Warner) Documentary of late Beatle.

Oliver & Company (Buena Vista) Dickens in Disneyland.

Scrooged (Paramount) David Johanssen almost steals this from Bill Murray.

The Rain Man (UA) Dustin Hoffman and Tom Cruise act up a storm.

Tucker: The Man and His Dream (Paramount) Coppola's stylized paean to forgotten auto auteur.



Die Hard (Fox) in Dolby surround sound.

U2: Rattle & Hum (Paramount) Hot rock group goes to the movies.

Who Framed Roger Rabbit? (Touchstone) 1988's #1 box-office hit.

Willow (Columbia) George Lucas in fantasyland.

Young Guns (Vestron) Go west, young men and shoot 'em up.

ABOUT LASERDISCS One Is Silver, the Other Gold

It may surprise some, but laser video discs (LV) have been around longer than laser—or digital—audio discs (CD). Ironically, it took the popularity of compact discs in the mid-Eighties to renew interest in the laserdisc. There are 2000 movie and music titles on laserdisc, most priced \$25 to \$70 apiece.

Laserdiscs come in one shape—round—but in various sizes, three to be exact, and in silver and gold. The silver platters are either 12- or 8-in. diameter. A limited number of laserdiscs are in the 8-in. size, mainly for music releases of 30 to 40 min. This year, new, thinner 8-in. singles are due in the U.S. Most

eo with digital sound, and up to 20 min. of digital audio only, which may be accompanied by still images.

The prime mover behind CD Video is Polygram. Its labels include Deutsche Grammophon, London, Philips Classics, Polydor, Mercury and Wing. Polygram distinguishes its laserdisc titles from all others by using CD Video to identify not only its 5-in. (CDV-Single) releases, but also its 12-in. (CDV-LP) and 8-in. (CDV-EP).

CDV-Singles sell for under \$10, while longer-form CDV-EP and CDV-LP titles are priced \$15 and up. Below is a sampling from the more than 100 CDV titles available. All are Polygram labels, except where noted.



"Moonwalker" (CBS) is MJ's newest video hi-fi album.

CDV-EP (8-in. silver)
Kiss: Crazy Nights

CDV-LP (12-in. silver)

The Robert Cray Band
Heavy Metal Compilation
Various Artists
Eurythmics: Live
Def Leppard: Hysteria
Bernstein: West Side Story
Kiri Te Kanawa,
Jose Carreras
BBC documentary
with music
Tina Turner: Live in Rio

Wagner: Der Ring Des Nibelungen
Pierre Boulez, Siegfried: Goetterdaemmerung
The Who: Who's Better Who's Best

CDV-Single (5-in. gold)

Joshua Bell: Brahms Hungarian Dance #1
MTV-type concept video in b&w
Yngwie Malmsteen: Heaven Tonight
Fat Boys: The Twist
John Cougar Mellencamp: Paper In Fire
Donald Fagen: New Frontier (Warner)
Randy Newman: I Love L.A. (Warner)
Tears for Fears (Warner)
Madonna: Papa Don't Preach (Warner)
Bon Jovi: Livin' On A Prayer

See D Graphics

What's so special about the CD of Talking Heads' *Naked* album? It's the first to feature CD+G(raphics). With the proper circuitry (built into a CD player or in a separate decoder), you can view song lyrics, follow the instruments at play and similar computer-like color images. The brainchild of Warner New Media, CD+G is constantly being refined. *Information Society* is another CD+G, and *Lou Reed's New York* recently became the third entry. A&M Records is releasing *Transmissions* from Gentlemen Without Weapons as its first CD+G. JVC offers a \$500 decoder that plugs into your CD player and TV.

videodiscs are in the larger, LP size and play up to 60 min. per side. A special disc type, called CAV, limits play to 30-min. per side but allows full use of all laser features, including freeze frame, slow motion and random access by individual frame within seconds. One disc side contains up to 54,000 frames. Special pressings of movies and special interest discs often will be marked "CAV." It is ideal for informational and educational purposes.

Voyager Press, also known by its label Criterion, specializes in laserdiscs that use the full features of CAV. For classic films, like *King Kong* and *Citizen Kane*, on the second audio track will be expert commentary that can be listened to while watching the movie. Supplementary material—such as production stills, outtake footage, original scripts and trailers—is sometimes included. Widescreen movies also are seen in their original shape, which Voyager calls Videoscope. All this comes at a premium, \$50 to \$100-plus per title.

CD Video—five-in., gold-tinted compact discs—is another type of laserdisc. It has five minutes of vid-



The Platters: laserdiscs come big, small, play video & digital audio.



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CD VIDEO IS MUSIC TO YOUR EYES!



PHILIPS

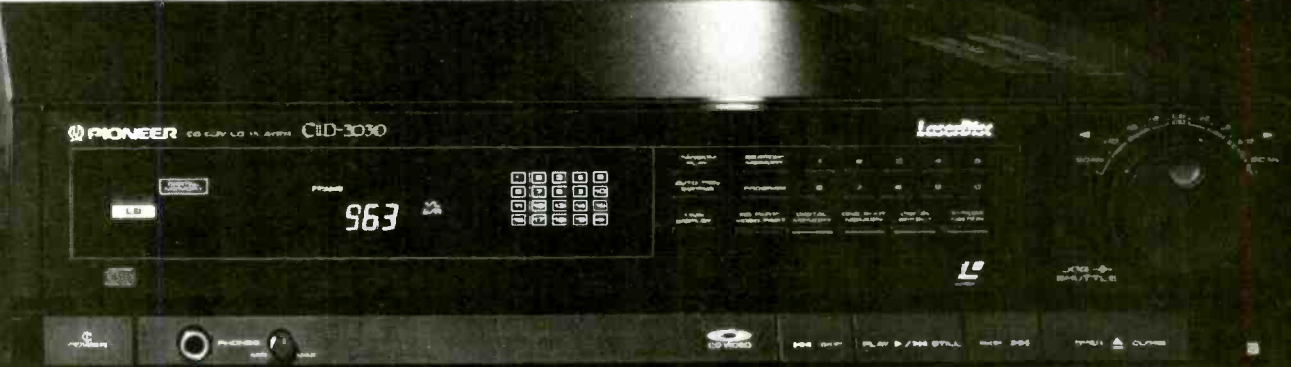
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HELP US HELP YOU!

PARTICIPATE IN THE STEREO REVIEW BUYER POLL

Stereo Review wants to know more about our readers. How much equipment you buy (and how often), how much you spend on it, what sort of product features you like. That will help us create a better, more informative magazine, specially geared to your tastes and preferences.

To gather this important information, we've created the Stereo Review Buyer Poll. And we need your help to make it work.

If you've bought any equipment within the past 30 days, we'd like you to participate (see instructions below). We'll use the information you give us to keep manufacturers up to date on the buying habits of stereo enthusiasts—the most knowledgeable group of audio buyers in the country. And in the long run, that will mean better service for you.

HOW TO PARTICIPATE

You can participate in the Stereo Review Buyer Poll by sending in the Reader Service Card appearing next to this page. We've provided space for you to list any equipment purchased in the past 30 days. Any kind of audio/video equipment qualifies.

For example:

Home Audio Components

- Amplifier
- Receiver/Tuner
- Speakers
- Turntable
- Cassette Deck
- Equalizer
- CD player

Portable Stereo

- Portable Cassette Player
- Portable CD Player
- Headphones

Car Stereo

- Tuner
- Cassette Deck
- Speakers

Home Video

- VCR
- Camcorder
- Videodisc Player
- Stereo TV

Fill in the type of equipment, manufacturer, model number, and price you paid. Include all the equipment you bought this month. Then print your name and address and drop it in the mail (we pay the postage). It's that simple!

★ ★ ★ Free Information Service ★ ★ ★

Get free literature on stereo products featured in this issue. Simply fill out your name and address, circle the number on the card that corresponds to the key number at the bottom of the advertisements and mail this card today.

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STEREO REVIEW BUYER POLL

1. In the past 30 days, have you purchased any audio or video equipment or accessories?
A. YES B. NO → Thank You!

2. Which type(s) of equipment did you purchase in the past 30 days?
A. Home audio B. Portable stereo
C. Car stereo D. Video

3. In the space below, please write in the type (speakers, car CD player, stereo VCR, etc.), the make, the model number and the price paid for each item purchased in the past 30 days.

TYPE	MAKE	MODEL	PRICE PAID
CD player	Spice	KS-5923	\$379.00
Speakers	Boys	BSS-80	\$450.00
car radio/cassette deck	Spencer	KT 9372(A)	\$1099.00

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LOOK FOR THE BUYER POLL EVERY MONTH

The Stereo Review Buyer Poll will appear in every issue—just check the Table of Contents for that month's location. You can participate in any month in which you purchased audio/video equipment. Of course, even if you don't join our Poll, you can still send in the Reader Service card to get information about products advertised in that month's issue.

We hope you'll participate regularly in the Stereo Review Buyer Poll. Your answers are important to us—and you'll find the resulting benefits important to you.

Thanks for helping us out!

Stereo Review

TAPE RECORDING

How to get the
most out of your cassette deck

MOST of us don't take the family car out to a test track to learn for ourselves just how hard we can corner without skidding or throwing the rear end out. It's a lot easier—and safer—to perform analogous tests on your cassette deck, however, and the advent of digital recordings makes it important for you to determine just how far you can stretch your machine's capabilities and still get good results.

Actually, cassette decks were not designed to accommodate the tremendous dynamic range and the high-level high-frequency content of CD's and live music. Dynamic range is the *difference* (in decibels) between the maximum and minimum signal levels. In the case of a cassette deck, the minimum signal is residual hiss, which begins to rise with frequency at 2,274 Hz for metal and CrO₂-type tapes or at 1,326 Hz for ferric-oxide tapes. At the maximum level, cassettes are limited in the bass end by the onset of distortion. At the treble end, the maximum recordable signal level decreases as the frequency rises.

Thus, the dynamic range of a cas-



sette deck is narrowest in the high frequencies, where it is limited both by the rising noise level and by a declining achievable signal level. This is not a problem in recording FM broadcasts, which are limited to 15,000 Hz and are usually compressed in overall dynamic range in order to reach as wide an audience as possible. Very few LP's come close to the full dynamic range of live music at all frequencies, either. In the case of a CD, on the other hand, the available dynamic range is the same throughout the audio frequency spectrum. That's why the cassette's limitations show up as vividly as they do when you try to dub a CD.

For the technically inclined, some of these limitations and their implications are graphically presented and discussed on the next two pages. If you're one of those readers who habitually skip the "Laboratory Measurements" section of our test reports, take heart anyway! With a few tips and a little patient practice in determining your deck's capabilities by ear, it's remarkable how good a job you can do on an up-to-date cassette deck, even with

ILING/NORTON



BY CRAIG STARK

An exemplary recording setup might include Yamaha's KX-800U cassette deck—with Dolby and dbx noise reduction and Dolby HX Pro—and high-quality headphones, such as Signet's EP700, for close monitoring.

theoretically "impossible" music sources. By an "up-to-date" cassette deck I don't mean it must have been bought in the last six months. In "Five Top Tape Decks" a year ago I included one model that was first tested for STEREO REVIEW in 1983. Today, however, even mid-price decks have come to incorporate features I would consider important in a cassette deck suitable for making critical recordings.

A Deck for Serious Recording

That *Dolby C* noise reduction is a must today might seem to need no argument. What many people don't realize, however, is that in addition to reducing audible tape hiss drastically, *Dolby C* significantly extends a deck's ability to record high-level high frequencies. That's like giving Achilles a heel protector.

Separate record and playback heads are next on my list of needed features for serious recording. From an engineering viewpoint, the compromise gap width that's necessary to use the same head for recording and playing back is too wide for top-quality playback and too narrow for optimal recording. And a "three-head" design is also necessary if you want to monitor the quality of a recording while you're making it. Without that ability you can't begin to make the adjustments needed to get away with fitting in a source signal (from a CD or live music) that's too big for the cassette medium.

A dual-capstan, closed-loop tape transport is the only practical way today to achieve adequately low wow-and-flutter. The moment-to-moment changes in tape speed that produce wow-and-flutter don't have to be so great that you can actually hear pitch changes in a sustained piano or flute note in order to ruin your recording. Tape-speed variations add a "graininess" or grit to the sound that makes violins and brass seem even more shrill and harsh than they do on a badly recorded CD.

Even well-miked CD's (and live music) contain far more treble energy than cassette decks can handle without assistance. For this reason, the *Dolby HX Pro headroom-extension system*, which allows you to put more treble on the tape at just the moments when it's needed, has become a much more important feature than it was when all we had to dub were FM and LP's.

While almost all machines auto-

matically switch their factory-set record bias and playback equalization for different tape *types* (ferric, CrO₂-equivalent, metal), different *brands* among each tape type frequently require slightly different bias settings than the tapes the manufacturer used. Too low a bias level results in excessive high-frequency response, low-frequency distortion, and a less-than-optimal signal-to-hiss ratio. Too high a bias current cuts off high frequencies like a knife going through butter.

Machines designed for serious recordists, then, include a *front-panel bias adjustment*. The top models include built-in test-tone generators that let you optimize the bias for any given tape while watching the machine's own record-level display. Many more-affordable decks have bias-optimization controls without the tone generator and indicating facilities. With such machines you must usually use a constant-noise source, such as FM interstation hiss, and adjust the bias until the source and tape signals sound the same.

If you use FM interstation hiss for optimizing bias, be sure to keep your record level down to approximately -20 dB on your machine's indicator. Otherwise, high frequencies in the "test" signal will begin to saturate the tape and give you a false impression.

Even with proper precautions, however, "earballing" the bias may not always work. If the audible level varies even slightly between your system's source and tape positions, it will be almost impossible to judge the proper bias setting by ear. Some decks provide a *tape sensitivity adjustment* that can bring the source and tape levels into sync. Such a feature is a sign of serious design, as making sure that the source and monitor levels are identical is also important for minimizing frequency-response errors in the operation of the noise-reduction system.

A defeatable FM-multiplex filter is a necessity unless you want to limit your frequency response to approximately 15,000 Hz. And, while it is rarely found, I think a separate *playback output-level control* is important, as it lets you exactly match the audible output level of your CD player in making A/B comparisons. The only alternative, with most decks, is to use the record-level control to do that job, which may compromise its best setting.

My final equipment-related rec-

FINDING THE LIMITS

The graphs on the facing page show the performance limits of even a top-of-the-line, audiophile-quality cassette deck faced with the challenge of recording demanding CD's. All of the measurements were made with a Nakamichi ZX9. Its bias and sensitivity settings were optimized for the high-quality tapes we used, Nakamichi ZX (metal) and SX (chrome-equivalent).

● **Figure 1.** One-third-octave measurements with 0 dB at 315 Hz. The red and blue curves, typical of "big" orchestral works, show some easing of peak demands at the frequency extremes. The green curve, however, from the last 35 seconds of the 1812 Overture, shows that in some recordings the demand at the frequency extremes can far exceed that at mid frequencies.

● **Figure 2.** Total harmonic distortion (THD) plus noise measured at 315 Hz both with and without *Dolby C*. The graph shows how much harder you can drive metal-particle tape before distortion becomes really serious—and that *Dolby C* noise reduction reduces the distortion products somewhat.

● **Figure 3.** Overall record-playback response, without *Dolby*, of metal tape at record levels from +5 to -20 dB. The compression of treble frequencies at high signal levels is so great that above about 15,000 Hz you actually get more output from an input level of -15 dB than from one of +5 dB!

● **Figure 4.** Overall record-playback response, without *Dolby*, of chrome-equivalent tape at the same record levels as in Figure 3. The high-frequency saturation effects are far more severe than for metal tape. At the very low frequencies there is less than 5 dB between the 0-dB and +5-dB curves. Compression has set in here, too, and the tape is crying "uncle."

● **Figure 5.** The top six curves show the overall record-playback response of metal tape at the same levels as in Figure 3 but using *Dolby C*. In addition to reducing noise, *Dolby C* actually lowers the amount of treble boost needed to achieve overall flat response, and the curves do not show as much treble loss at high levels as before. The three curves in the lower part of the graph show the frequency distribution of tape noise, in one-third-octave measurements, with and without *Dolby* (they are cut off below 200 Hz because the *Dolby* systems have no effect in that range).

● **Figure 6.** The top six curves show the overall record-playback response with chrome-equivalent tape at the same levels as in Figure 4 but using *Dolby C*. The high-level treble losses are considerably reduced by *Dolby C*, though they are still greater than with metal tape (Figure 5). The lower three curves again show the distribution of tape noise.



Figure 1. Peak signal levels in hard-to-record CD's.

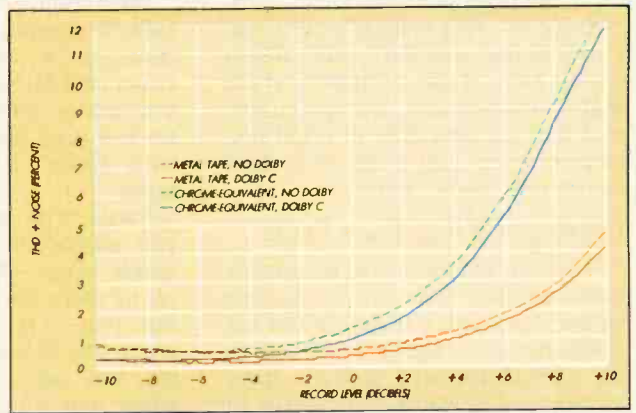


Figure 2. Distortion performance of metal and chrome-equivalent tape.

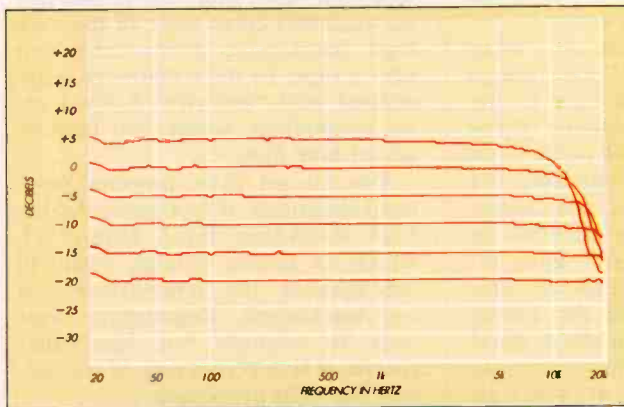


Figure 3. High-frequency saturation of metal tape without Dolby.

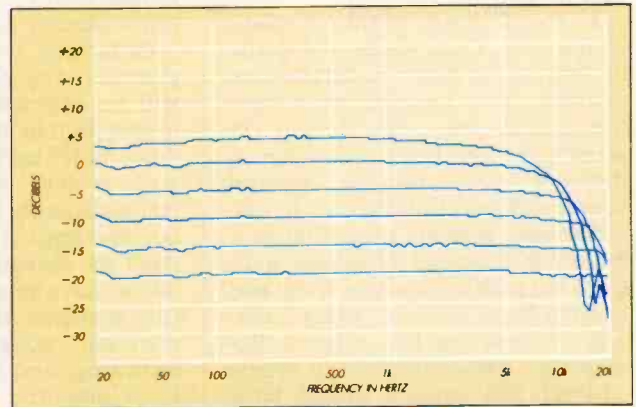


Figure 4. High-frequency saturation of chrome-equivalent tape without Dolby.

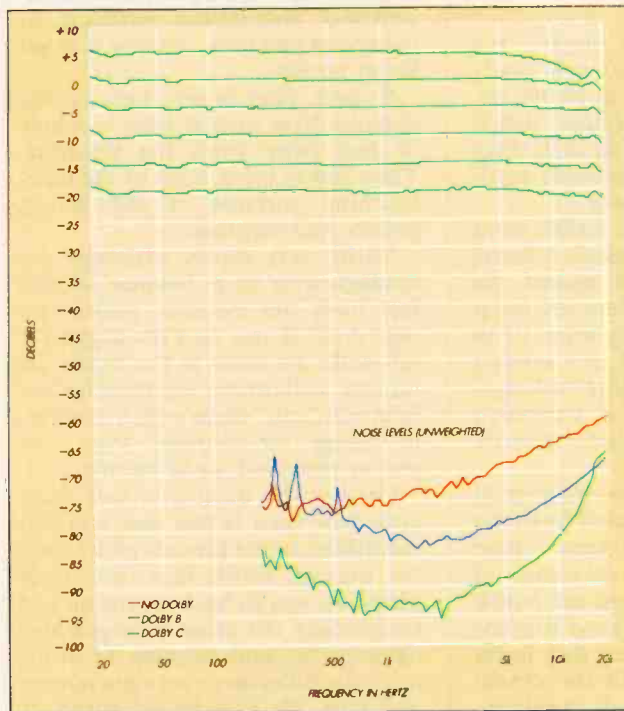


Figure 5. Metal-tape performance with Dolby C and comparative noise levels.

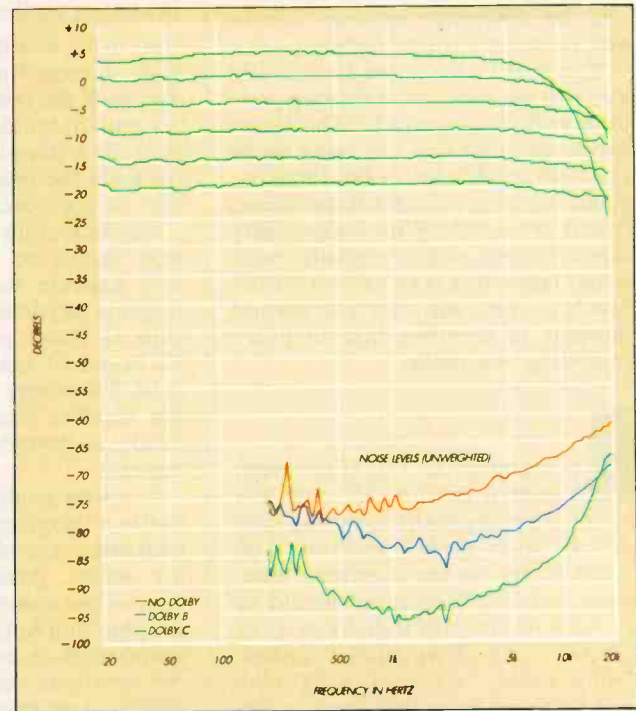


Figure 6. Chrome-equivalent-tape performance with Dolby C and comparative noise levels.

ommendation is to use *metal-particle tape* for very critical recordings. Ferric-oxide and CrO₂-equivalents do not have as much capacity at the high-frequency end, and at the low end they are less able to resist distortion when you push your deck beyond its "0-dB" limit.

Getting to Know Your Deck

While it's harder to determine your machine's actual limitations by ear than with a bench full of lab instruments, in the end your ear is the only instrument that you have to satisfy. And using a good pair of headphones can make the job of monitoring a recording or a calibration passage much easier.

To test the limits of your machine audibly, use a CD player and a disc of "known" difficult material—one of those demo spectaculars (everyone has at least one). Record the same selection again and again at different levels, flipping between source and tape and listening for the *differences*. Audible distortion or a fall-off in high-end brilliance indicates too high a recording level, and audible tape hiss in "silent" passages means too low a level. Remember, your goal is *not* to decide whether this passage should have "more bass" or that one "smoother highs." Your goal is to make a recording that's so faithful you can't tell the difference between source and monitor switch positions.

You may be surprised to find that you can get away with driving your deck well "into the red." There's an explanation for this. On many decks the 0-dB level is set to the Japanese standard level of 160 nanowebers (nwb) per meter. With high-quality tapes today, and especially with metal tapes, this is an unrealistically low level that will cost you several decibels of needless hiss in every recording you make.

In practice, the IEC (European) standard level of 250 nwb per meter is a more realistic setting for 0 dB. If your deck's marked 0-dB point is set to the Japanese standard, the IEC 0-dB point would be at +3.8 dB on your indicators. (The official, and frequently marked, Dolby calibration level is 200 nwb per meter, midway between the Japanese and European zero points; it is certainly safe to use this as 0 dB with good tapes.)

Inevitably, given the limits of the cassette medium, you will hit recordings that you can't dub without either audibly overloading the loud sections or setting the record level so low that you hear hiss—even with Dolby C—in the soft passages.

Faced with this situation, what you should do is to *fake* the dynamic range—following the example of countless record engineers before you. "Gain riding" is a technique you should avoid when possible, but use it without hesitation when you must. What you do is *slowly* fade up a little before the very, very quiet passages and *slowly* reduce your record level before the tremendously loud sections.

Perfecting this technique takes practice. Any sudden gain change will be detectable not only in the music, but in the character of the "inaudible" background noise. That noise is never really inaudible; it's just sufficiently low and constant to ignore—until it draws attention to itself by changing. Gain riding reduces the original loud-to-soft ratio (the dynamic range of the source material) enough to make a good recording, and if done judiciously by a practiced hand, it *won't* be spotted. That's hi-fi heresy, no doubt, but it's also true.

Next to Godliness

A little overbias or slightly too high a recording level can easily diminish the response at 10,000 Hz. So can a build-up of tape debris only 20 millionths of an inch thick (roughly the size of one oxide particle) on your deck's heads.

Look carefully at the visible band that forms on the pinch-roller(s) that squeeze the tape against the rotating capstan(s). When you see it start to form, generally after 10 to 12 hours of use—and, for safety's sake, before any critical recording—it's time to clean your recorder's heads, as described in your owner's manual.

A cotton swab or two and a small bottle of isopropyl alcohol from the pharmacy are all you need. There are more powerful solvents, of course, but some of them can attack the glue that holds the head laminations together, and others may harm the synthetic rubber in the pinch-rollers. And don't use a "rubbing-alcohol" *compound*. These usually contain glycerine and leave behind an oily film. That may be fine for

the skin, but it's the last thing you want in your tape drive.

Like other rites for propitiating unseen powers, head demagnetizing ("degaussing") is a mystery to the uninitiated. But it's a ritual faithfully performed (usually at head-cleaning time and just before a critical recording session) by all knowledgeable tape devotees.

BOTH tape heads and ferrous tape guides and capstans can, over time or by sudden incident, accumulate a small, residual magnetic charge. Applied to the tape as it flows past, this charge can permanently erase some of the very high frequencies every time you play a tape. In their place the magnetized part "records" a low-level DC magnetism, which you hear as added tape hiss.

You can get an AC-powered tape-head degausser at any audio dealer. I use the Annis Han-D-Mag (\$31), which is strong enough even to demagnetize the screwdrivers on my workbench. Degaussing takes only 30 seconds, but, like other rituals, it is effective only if you follow the right procedure.

First, turn your cassette deck off and remove any cassettes in its immediate vicinity. Open the cassette-well door, and, if your owner's manual shows you how, remove it to get better access.

Second, plug in and turn on the demagnetizer unit at least a couple of feet away from the machine. Then *slowly* bring it up to the tape-touching surfaces of the heads, guides, and capstans.

Third, very slowly withdraw the demagnetizer to a distance several feet from the machine *before* you turn it off. If you turn the degausser off while it's close to the heads, its rapidly collapsing electromagnetic field will "zap" them with a magnetic charge far stronger than any you've removed, so be careful.

Getting the most you can from your tape deck is one way you can contribute to the process of creating the musical thrills that hi-fi is all about. As you go back recording and rerecording the same passages and listening for and learning to minimize the differences between source and tape, it's easy to get bored. It was just as easy for the musician who had to practice all those scales. But no pain, no gain, right? □

TAPE BUYING GUIDE

BASF

Digital Audio Tapes

Ultra-fine metallic pigment specifically developed for helical-scan recording.

DAT C120, 120 min	around \$13
DAT C90, 90 min	around \$12
DAT C60, 60 min	around \$11

Metal Maxima IV Cassettes

Metal-particle formulation, high-performance cassette mechanism.

C120, 120 min	\$6.49
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Chrome Maxima II Cassettes

High-density chrome formulation, dual-layer coating, high-performance cassette mechanism.

C90, 90 min	\$3.99
C60, 60 min	\$3.29

Chrome Extra II Cassettes

Pure chrome formulation, high-performance cassette mechanism.

C90, 90 min	\$2.99
C60, 60 min	\$2.69

Ferro Maxima I Cassettes

Dual-layer "micro-coating" of BASF megadium iron oxide.

C90, 90 min	\$2.89
C60, 60 min	\$2.59

Ferro Super I Cassettes

High MOL to increase S/N, extra high-frequency sensitivity.

C90, 90 min	\$2.54
C60, 60 min	\$1.94

Ferro Extra I Cassettes

Iron-oxide formulation features increased S/N over the entire frequency range.

C90, 90 min	\$1.69
C60, 60 min	\$1.49



DENON

All Denon cassettes feature large window, lifetime warranty, and head-cleaning leader.

High Density Series

HD-M Metal Cassettes

High-stability metal tape formulation uses high-density dispersion technology that yields a residual magnetic flux density of over 3,500 gauss and a coercivity of 1,200 Oe.

HDM-100, 100 min	\$5.99
HDM-90, 90 min	\$5.50
HDM-75, 75 min	\$4.99

HD8 High-Bias Cassettes

High-density metal particle formula uses New High Technorom magnetic pigment to increase residual flux density to 3,000 gauss yielding an MOL of -4.5 dB at 10,000 Hz.



IN 1987

Americans purchased 390 million blank audio cassettes and 410 million prerecorded cassettes, confirming that the compact cassette remains our favorite music format. As of mid 1988, cassettes were outselling CD's by a three-to-one margin and LP's by nearly five to one.

The information contained in this Buying Guide was provided by the manufacturers. The suggested retail prices were current at press time but are subject to change, and actual selling prices vary from retailer to retailer in any case. Although cassettes dominate these pages, open-reel enthusiasts take heart—two manufacturers, Maxell and Radio Shack (Realistic), still offer consumer open-reel products (3M and others make open-reel tapes for professional applications). Manufacturers' addresses appear on page 90.

HD8-100, 100 min	\$4.99
HD8-90, 90 min	\$4.75
HD8-75, 75 min	\$4.25

HD7 High-Bias Cassettes

Type II formulation with extended high-frequency response and low noise. Residual flux density 1,850 gauss, MOL -6.5 dB at 10,000 Hz.

HD7-90, 90 min	\$4.00
HD7-75, 75 min	\$3.50

HD6 High-Bias Cassettes

Type II formulation with extended high-frequency response. Residual flux density 1,700 gauss, MOL -5.7 dB at 10,000 Hz.

HD6-100, 100 min	\$3.75
HD6-90, 90 min	\$3.25
HD6-75, 75 min	\$3.00

DX Series

DX4 Ferric Normal Cassettes

Type I formulation with extended frequency response. Residual flux density 2,000 gauss, MOL -5.0 dB at 10,000 Hz.

DX4-90, 90 min	\$4.00
DX4-60, 60 min	\$3.00



DX1 Ferric Normal Cassettes

Low-noise high-output Type I cassette with high sensitivity and high MOL (-7.5 dB at 10,000 Hz).

DX1-90, 90 min	\$2.25
DX1-60, 60 min	\$1.75

FUJI

FR Metal Series Cassettes

Metal-coated tape with tensilized polyester base; designed for metal bias, 70-μsec EQ, packaged in hinged plastic box.

FR (C-90), 90 min	\$5.99
FR (C-60), 60 min	\$5.49
FR (C-46), 46 min	\$4.99

FR-II Super Series Cassettes

Super-premium Type II high-bias cassettes with 70-μsec EQ and cobalt-modified super-fine Beridox magnetic particles.

FR-II Super (C-90), 90 min	\$4.99
FR-II Super (C-60), 60 min	\$4.49



TAPE BUYING GUIDE

FR-II Series Cassettes

Chromium-dioxide cassettes with tensilized polyester base; designed for Type II/CrO₂ bias, 70-μsec EQ. Comes packaged in hinged plastic box.

FR-II (C-90), 90 min	\$3.99
FR-II (C-60), 60 min	\$3.49

DR Series Cassettes

Type I normal-bias cassettes with 120-μs EQ.

DR (C-90), 90 min	\$1.99
DR (C-60), 60 min	\$1.49

Digital Audio Tape

Super-Fine Metallix ultra-fine metal-particle formulation.

DAT (R-120), 120 min	\$12.95
DAT (R-90), 90 min	\$11.95
DAT (R-60), 60 min	\$10.95

GOLDSTAR

Cassette Tapes

All tapes have tensilized polyester base material; tape width 3.81 mm; tape length 135 m; yield strength 5.0 kg; breaking strength 1.0 kg; residual elongation 0.05%; squareness ratio 0.85; sens uniformity 0.3 dB; output fluctuation 0.4 dB (except for HP: 0.5 dB).

MT Series Cassettes (Metal)

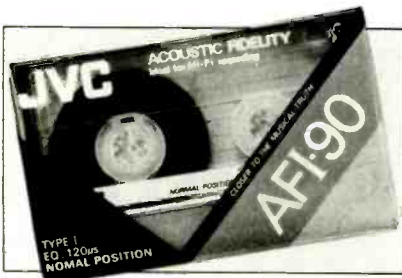
C-90	\$4.65
C-60	\$3.15

CR Series Cassettes (Chrome)

C-90	\$1.89
C-60	\$1.49

HP Series Cassettes (Ferric)

C-90	98¢
C-60	85¢



JVC

F Series Cassettes

XFIV, Metal tape with 70-μs EQ.	
C-90	\$4.50
AFII, High-bias tape (CrO ₂) with 70-μs EQ.	
C-90	\$2.60
C-60	\$2.35
AFI, Normal-bias tape with 120-μs EQ.	
C-90	\$2.20
C-60	\$1.80

G1 Normal-Bias Cassette Tape

Popular series. Coercivity 370 Oe.

C-90, 90 min	\$1.60
C-60, 60 min	\$1.30

LASER BY SWIRE MAGNETICS

Laser UHD-II Cassettes

High-bias ferric cassettes with high energy and extended frequency response.

C-90	\$2.59
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Laser UHD-I Cassettes

Normal-bias ferric cassettes with high-energy and high-density formulation.

C-90	\$2.59
C-60	\$1.99

Laser XL Cassettes

Normal-bias ferric cassettes with low noise for voice or music.

C-90	\$1.89
C-60	\$1.49
C-45	\$1.39



MAXELL

Digital Audio Tape

Features Ceramic-Armor metal-particle formulation.

120DM, 120 min	\$14.99
90DM, 90 min	\$12.99
60DM, 60 min	\$10.99
46DM, 46 min	\$8.99

MX Metal Cassettes

Metal bias/EQ.	
MX-100, 100 min	\$5.99
MX-90, 90 min	\$5.29
MX-60, 60 min	\$4.39

XLII-S Epitaxial Cassettes

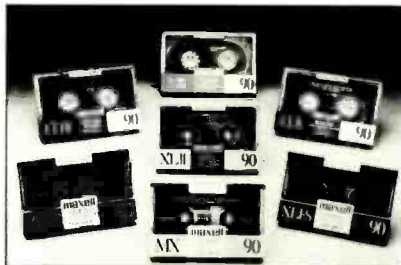
High-level bias; 70-μsec EQ.	
XLII-S100, 100 min	\$4.99
XLII-S90, 90 min	\$4.39
XLII-S60, 60 min	\$3.59

XLI-S Epitaxial Cassettes

Normal bias; 120-μsec EQ.	
XLI-S90, 90 min	\$4.39
XLI-S60, 60 min	\$3.59

XL-II Epitaxial Cassettes

High-level bias; 70-μsec EQ.	
C-100, 100 min	\$4.39
C-90, 90 min	\$3.99
C-60, 60 min	\$3.29
C-46, 46 min	\$3.29



UD-II High-Bias CrO₂ Cassettes

High-level bias; 70-μsec EQ.	
C-90	\$3.29
C-60	\$2.49
C-46	\$2.49

UD-I Normal-Bias Cassettes

Normal bias; 120-μsec EQ.

C-90	\$3.29
C-60	\$2.49
C-46	\$2.49

Normal-Bias Cassettes

Normal bias; 120-μsec EQ.

UR-120, 120 min	\$2.79
UR-90, 90 min	\$1.79
UR-60, 60 min	\$1.49
UR-46, 46 min	\$1.49

Open-Reel Tapes

XLI Back-Coated Open-Reel Tapes

XLI 35-180B, 3,600 ft, 10.5" reel	\$35.79
XLI 35-90B, 1,800 ft, 7" reel	\$12.79

Ultra-Dynamic Open-Reel Tapes

UD35-180, 3,600 ft, 10.5" reel	\$28.39
UD35-90, 1,800 ft, 7" reel	\$9.19

MEMOREX BY MEMTEK

CDX II Metal High-Bias Cassette

Metal tape for recording CD's or other demanding source material. 70-μsec EQ. Greater headroom for distortion-free reproduction at significantly higher recording levels than conventional high-bias tapes. New permanent reference cassette mechanism shell.

C-90	\$4.79
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HBX II High-Bias Cassettes

High-performance ferric/cobalt tape for use at high-bias, 70-μsec settings. Higher MOL's, greater sensitivity compared to standard high-bias and CrO₂ tapes. New permanent reference cassette mechanism.

HBX II High-Bias C-90	\$3.79
HBX II High-Bias C-60	\$2.99

HBS II High-Bias Cassettes

Premium tape for high-bias, 70-μsec positions. Improved low-end MOL, greater sensitivity, new permanent reference cassette mechanism; high-visibility clear shell.

HBS II High-Bias C-100	\$2.59
HBS II High-Bias C-90	\$2.29
HBS II High-Bias C-76	\$1.99
HBS II High-Bias C-60	\$1.79
HBS II High-Bias C-46	\$1.59

MRX I Normal-Bias Cassettes

Premium normal-bias tape. Lifetime warranty. High-visibility clear shell.

C-90	\$2.29
C-60	\$1.79

dBS Normal-Bias Cassettes

Normal-bias tapes for all general-purpose voice or music recording. Features high-visibility clear shell.

C-120	\$1.99
C-90	\$1.49
C-60	\$1.19
C-46	\$1.10

NAKAMICHI

ZX Reference Cassette Tapes

Metalloy (metal-particle) formulation for recording on metal-compatible decks only; features ultra-high coercivity and retentivity for improved distortion and MOL; 70-μsec EQ.

ZX-C90, 90 min	\$10
ZX-C60, 60 min	\$7.25

SX II Reference Cassette Tapes

Double-coated ionized cobalt and ferric-oxide

TAPE BUYING GUIDE

formulation. CrO₂ bias and EQ (70 μsec).
SXII-C90. 90 min \$8.90
SXII-C60. 60 min \$6.50

SX Reference Cassette Tapes

Single-coated ionized-cobalt and ferric-oxide formulation; high coercivity permits use of CrO₂ bias and EQ (70 μsec) for 4-5 dB better S/N.
SX-C90. 90 min \$6.50
SX-C60. 60 min \$4.50

EX II Reference Cassette Tapes

Single-coated ferricobalt formulation; normal bias and EQ (120 μsec); extra-low noise, high output.
EXII-C90. 90 min \$6
EXII-C60. 60 min \$4.25

REALISTIC Cassette Tape

Prices may vary according to quantity purchased, with prices lower per tape with larger quantities.



MIV Metal

Fine-grain metal particles; 5-screw housing; hinged storage box.
MIV-90. 90 min \$6.99-\$4.89
MIV-60. 60 min \$5.99-\$4.19

MII Metal High-Bias

Metal tape for recording and playback with Type II bias and EQ; head-cleaning leader; hinged storage box.
MII-90. 90 min \$5.69-\$3.99
MII-60. 60 min \$4.89-\$3.43

IID High-Definition Chrome-Equivalent

For recording and playback with Type II bias and EQ; head-cleaning leader; hinged storage box; index card.
IID-90. 90 min \$4.29-\$2.97
IID-60. 60 min \$3.49-\$2.45

XR Premium Ferric

Hinged storage box with index card.
XR-120. 120 min \$4.99-\$3.29
XR-90. 90 min \$3.79-\$2.59
XR-60. 60 min \$2.79-\$1.89
XR-45. 45 min \$2.45-\$1.79

LN Low-Noise Standard Ferric

Hinged storage box with index card.
LN-120. 120 min \$3.49-\$2.29
LN-90. 90 min \$2.79-\$1.85
LN-60. 60 min \$1.99-\$1.29
LN-30. 30 min \$1.59-\$1.05

Concertape Ferric Cassettes

C-120. 3-pack; each 120 min \$4.99-\$4.39
C-90. 3-pack; each 90 min \$3.59-\$3.19
C-60. 3-pack; each 60 min \$2.59-\$2.29
C-30. 3-pack; each 30 min \$1.99-\$1.79
C-90. Single; 90 min \$1.25
C-60. Single; 60 min \$0.88



Open-Reel Tape

Supertape Premium. Polyester base, super-calendared.

5" reel; 900 ft; 1.0 mil; 1-9 tapes \$3.99 ea
 5" reel; 900 ft; 1.0 mil; 10+ tapes \$3.19 ea
 7" reel; 1,200 ft; 1.5 mil; 1-9 tapes \$5.99 ea
 7" reel; 1,200 ft; 1.5 mil; 10+ tapes \$4.79 ea
 7" reel; 1,800 ft; 1.0 mil; 1-9 tapes \$6.99 ea
 7" reel; 1,800 ft; 1.0 mil; 10+ tapes \$5.99 ea
 7" reel; 3,600 ft; 0.5 mil; 1-9 tapes \$12.99 ea
 7" reel; 3,600 ft; 0.5 mil; 10+ tapes \$10.39 ea
Low-Noise. Polyester Base.
 7" reel; 1,800 ft; 1.0 mil \$5.99-\$4.39 ea
 7" reel; 2,400 ft; 0.5 mil \$6.99-\$5.19 ea
 7" reel; 3,600 ft; 0.5 mil \$7.99-\$6.39 ea
Concertape. Polyester Base.
 7" reel; 1,800 ft; 1.0 mil \$2.49 ea

RECOTON

Gold Series Cassettes

Low noise, high energy, normal bias.
SX-100. 10 pack \$19.99
XR-90. 10 pack \$9.99
SX-100. 2 pack \$4.99
SX-90. 2 pack \$4.49
SX-60. 2 pack \$3.99

High-Bias Series Cassettes

Cobalt-oxide formulation.
XCD-100. 5 pack \$9.79
XCD-100. 2 pack \$3.99



SCOTCH

Digital Audio Tape

C-120 \$15
C-90 \$13
C-60 \$11
C-46 \$9

XSM IV Cassettes

Fine metal-particle formulation; delivers up to 10 dB higher maximum output than typical oxide tapes and up to 7 dB higher than chrome

tapes; low distortion, added high-frequency response, and improved S/N.

90 min \$6.99
60 min \$5.49

XS II Cassettes

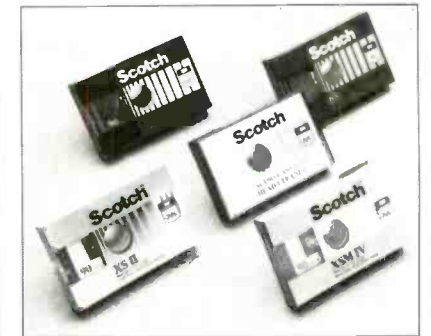
Features redeveloped premium-grade formula with improved S/N; less tape hiss; dual-layer, cobalt-modified ferric oxide; for use with recorders in the chrome or 70-μsec EQ position; improved shell for critical mechanical permanence.
90 min \$3.79
60 min \$2.99

CX Cassettes

Normal-bias ferric-oxide cassette featuring improved low-frequency output and clarity. 6-screw impact-resistant polymer shell houses an inner assembly with specially made low-friction roller guides; album package.
90 min \$2.99
60 min \$2.40

BX Cassettes

Ferric-oxide formulation for all-purpose cassette use; polyester base. 5-screw impact-resistant polymer shell featuring low-friction roller guides.
90 min \$1.95
60 min \$1.69



SONY

ES Metal Cassette

Type IV position (70-μs EQ).
ES-90. 90 min \$9.99

UX Series Cassettes

Type II position (70-μs EQ).
UX Pro. C-90 \$7.99
UX-Pro. C-60 \$5.99
UX-ES. C-90 \$5.49
UX-ES. C-60 \$3.99
UX-S. C-90 \$3.99
UX-S. C-60 \$2.99
UX C-90 \$3.29
UX-60 \$2.49

HF-S Series Cassettes

Type I position (normal bias, 120-μs EQ).
HF-S 90. 90 min \$2.69
HF-S 60. 60 min \$1.99



TAPE BUYING GUIDE



HF Series Cassettes

Type I position (normal bias, 120- μ s EQ).

HF 120. 120 min	\$2.99
HF 90. 90 min	\$2.29
HF 60. 60 min	\$1.79
HF 46. 46 min	\$1.49

TDK

MA-XG Metal-Alloy (Type IV) Cassette Tape

Metal bias; 70- μ s EQ; 3-layer RS-II vibration-damping mechanism designed to eliminate sympathetic vibrations for reduced modulation noise.

MA-XG 90. 45 min each side	\$9.25
MA-XG 60. 30 min each side	\$7



MA-X Metal-Alloy (Type IV) Cassette Tape

Metal bias; 70- μ s EQ; Super Precision Anti-Resonance II cassette mechanism; improved Finavinx formulation designed for superior output level and wide dynamic range.

MA-X 90. 45 min each side	\$5
MA-X 60. 30 min each side	\$4.25
MA-X 46. 23 min each side	\$4.25

MA Metal-Alloy (Type IV) Cassette Tape

Metal bias; 70- μ s EQ; Super-Precision Anti-Resonance cassette mechanism.

MA-110. 55 min each side	\$5.25
MA-90. 45 min each side	\$4
MA-60. 30 min each side	\$3.50

SA-XG High-Bias (Type II) Cassette Tape

RS-II high-performance cassette mechanism; Super Avilyn formulation.

SA-XG 90. 45 min each side	\$8.75
SA-XG 60. 30 min each side	\$6.50

SA-X High-Bias (Type II) Cassette Tape

Super-Precision Anti-Resonance II cassette mechanism; dual-coated Super-Avilyn formulation; 70- μ s EQ.

SA-X 90. 45 min each side	\$3.50
SA-X 60. 30 min each side	\$3
SA-X 46. 23 min each side	\$3

SA High-Bias (Type II) Cassette Tape

Super-Precision Anti-Resonance cassette mechanism.

SA 100. 50 min each side	\$4
SA 90. 45 min each side	\$3
SA 76. 38 min each side	\$2.75
SA 60. 30 min each side	\$2.50

SD High Bias (Type II) Cassette Tape

Low noise; improved sensitivity and MOL; High-Precision Anti-Resonance mechanism.

SD-90. 45 min each side	\$2.50
SD-60. 30 min each side	\$2.25
SD-46. 23 min each side	\$2.25

AR-X Normal-Bias (Type I) Cassette Tape

Dual coating of nonporous ferric particles for extra headroom; Super Avilyn particle for extra headroom; Super-Precision Anti-Resonance cassette mechanism; 120- μ s EQ.

AR-X 90. 45 min each side	\$3
AR-X 60. 30 min each side	\$2.50

AR Normal-Bias (Type I) Cassette Tape

Nonporous ferric particles; High-Precision Anti-Resonance mechanism.

AR-100. 50 min each side	\$3.50
AR-90. 45 min each side	\$2.75
AR-60. 30 min each side	\$2.50

AD Normal-Bias (Type I) Cassette Tape

Linear ferric-oxide particles; High-Precision Anti-Resonance cassette mechanism; 120- μ s EQ.

AD-X 90. 45 min each side	\$2.50
AD-X 60. 30 min each side	\$2.25

D (Dynamic) Cassette Tape

Normal bias; 120- μ s EQ; High-Precision RCII mechanism.

D-120. 60 min each side	\$2.50
D-90. 45 min each side	\$2.00
D-60. 30 min each side	\$1.75
D-46. 23 min each side	\$1.60
D-30. 15 min each side	\$1.50

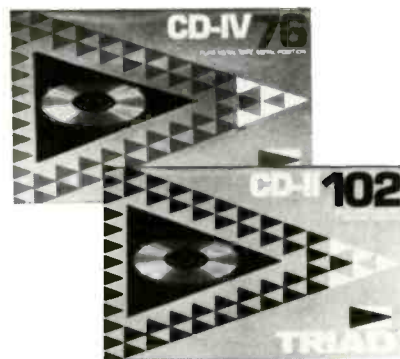
TRIAD

Cassette Tape

MG-X90. Metal-particle (Type IV) tape; high bias, 70- μ s EQ; FR to 10,000 Hz +0 dB; MOL +5 dB at 315 Hz. -10 dB at 10,000 Hz; retentivity 3,300 gauss; cocrcivity 1,150 Oe; 90 min. \$5.99

CD-IV 76. Metal tape; 76 min. \$5.79

CD-II 102. Type II tape with exclusive metal alloy; 120 min.	\$5.99
CD-II 76. As above. 76 min	\$5.39



EM-X90. Type II metal tape; high bias; 70- μ s EQ; FR to 10,000 Hz +0.5 dB; MOL +5.0 dB at 315 Hz, -3.0 dB at 10,000 Hz; retentivity 3,100 gauss; cocrcivity 720 Oe; 90 min. \$4.99

F-X90. Type I tape; normal bias and EQ; FR to 10,000 Hz +3.0 dB; MOL +5.5 dB at 315 Hz, -6.0 dB at 10,000 Hz; retentivity 1,800 gauss; cocrcivity 380 Oe; 90 min. \$3.99

VISA BY INTERWORLD ELECTRONICS INC.

UCX-II-S High Tech Turbo

High-bias cassette tape with ultra-refined CrO₂ coating and special housing.

90 min	\$4.99
60 min	\$3.49

UCX-II High Tech Turbo

High-bias cassette tape.

90 min	\$3.99
60 min	\$2.99

UFY-I High Tech Turbo

Ferric cassette tape with clear housing.

90 min	\$3.99
60 min	\$2.99

CX-II Professional Tape

High-bias cassette tape.

90 min	\$3.49
60 min	\$2.49

FDX-I Professional Tape

Ferric cassette tape.

90 min	\$2.79
60 min	\$1.99

Extra Performance II Tape

High-bias cassette tape.

90 min	\$2.49
60 min	\$1.99

High Performance I Tape

Ferric cassette tape with iron-dioxide coating.

90 min	\$1.99
60 min	\$1.59

DIRECTORY OF MANUFACTURERS

BASF, 10 Crosby Dr., Bedford, MA 01730

Denon, 222 New Rd., Parsippany, NJ 07054

Fuji, 555 Taxter Rd., Elmsford, NY 10523

Goldstar, 1050 Wall St. W., Lyndhurst, NJ 07071

JVC, 41 Slater Dr., Elmwood Park, NJ 07407

Laser by Swire Magnetics, 301 E. Alondra Blvd., Gardena, CA 90248

Maxell, 60 Oxford Dr., Moonachie, NJ 07074

Memorex by Memtek, P.O. Box 901021, Ft. Worth, TX 76101

Nakamichi, 19701 S. Vermont Ave., Torrance, CA 90502

Realistic by Radio Shack, 1300 One Tandy Center, Ft. Worth, TX 76102

Recoton, 46-23 Crane St., Long Island City, NY 11101

Scotch by 3M, 3M Center, St. Paul, MN 55144-1000

Sony, Sony Dr., Park Ridge, NJ 07656

TDK, 12 Harbor Park Dr., Port Washington, NY 11050

Triad by Harman America, 240 Crossways Park W., Woodbury, NY 11797

Visa by Interworld Electronics, 3095 N.W. 77th Ave., Miami, FL 33122

SPEAKER OF THE HOUSE

BY WARREN BERGER



Stylish in-wall speakers are beginning to rival boxed speakers in sound quality.

■
The two-way Boston Acoustics Model 360, shown above in a "media wall," is \$350 to \$450 a pair installed.

Remember when you were back in elementary school and class would be interrupted by a burst of raspy static (it sounded vaguely like the principal's voice, but no one could be sure) emanating from a tiny in-wall speaker somewhere up near the ceiling? Remember how awful that sounded? No wonder you've cringed at the thought of in-wall speakers ever since.

Well, cringe no more. In-wall speakers for the home are beginning to rival boxed speakers in sound quality—and that quality, coupled with their camouflage appeal, is heating up demand among discriminating listeners who want their music to be heard but not seen.

The demand for in-wall speakers has increased so much, in fact, that speaker manufacturers are now scrambling to keep up. Not long ago, Polk Audio decided to dip its toe into the market with a single in-wall model, and the item has been on back-order ever since; the company is now set to introduce two or three additional in-wall models in the coming months.

Similarly, other speaker makers are rapidly gearing up for the in-wall boom. As one of them told me, "The market is hot now, but we've only scratched the surface."

THE new popularity of in-wall speakers is directly tied to recent improvements in the technology over the last two years. The category, which once consisted largely of modified car stereo speakers, is now benefiting from serious r-&d efforts by some of the speaker world's heaviest hitters. Along with Polk, KEF recently made a major move into the high-end flush-mount market, and introductions from B&W are on the way. Meanwhile, in-wall speaker veterans such as a/d/s/ and Boston Acoustics have upgraded their offerings, as have Sonance, Phase-Tech, and Bang & Olufsen. The current in-wall models are no longer retooled car speakers; they feature sophisticated crossover networks, and many have the same high-quality woofers and tweeters found in better boxed speakers. Some companies are also offering in-wall subwoofers so you can really rock the house. With these advances, manufacturers are addressing the sonic problems traditionally associated with in-wall speakers—inaccurate imaging and weak bass—while also improving construction hardware and cosmetics.

"The in-wall speakers we're building now are vastly superior to what we produced a couple of years ago," said Russ Wells, national sales manager at Phase-Tech. "Engineering and design have become much more sophisticated." That, in turn, has enabled audio dealers to recommend in-wall speakers with confidence. "In the past, in-wall speakers represented a compromise," according to Charles O'Meara, president of Absolute Sound, a high-end audio store in Winter Park, Florida. "Basically, the customer had to trade off good performance for the sake of appearances. Today, for the first time, these can be considered credible speakers."

The main appeal of in-wall speakers has always been their ability to blend into any setting, and that hasn't changed. If anything, the speakers are more subtle than ever; some models are barely visible once installed. The only part of the speaker that shows is the faceplate, which generally measures no more

than 8 x 12 or 6 x 10 inches. The clean, contoured grilles and trim generally come in a matte white, which can be painted; some grilles can be covered with cloth to match the wall. Either way, the speakers are designed to create a perfect match with the existing decor.

Wall-mounted speakers tend to be ideal for "secondary" applications—in kitchens, bedrooms, and dens, where space is at a premium and boxed speakers just don't fit with the decor. In-wall speakers can be installed in these rooms and wired, through the walls, to a main system. Meanwhile, in "primary" listening rooms, in-wall speakers are frequently used as add-ons for a surround-sound system.

"That's the application we're most excited about," said Paul Di-Como, national sales manager at Polk. "One of the problems with surround sound has always been where to put all the speakers. Now customers are using boxed speakers up front and two or four in-wall speakers elsewhere in the room."

For primary applications—that is, used as primary speakers in the main listening system—in-wall speakers may still not measure up to audiophile standards. There are some inherent problems with wall-mounted speakers that have not yet been fully solved. For one, unless bass reinforcement is provided, most in-wall speakers still lack deep, rich bass response. In addition, performance of the speakers can vary in different walls because there's no real way for speaker makers to gauge the air volume that the woofer will encounter in a particular wall space (it varies according to the height of the wall, the amount of insulation in the wall, etc.). Another common problem that is associated with wall-mounted speakers is "sympathetic vibration" in the wall itself, which can lead to diffraction distortion.

The bass problem is the most noticeable, and it's one that some manufacturers have tried to address through in-wall subwoofers. KEF's CR250SW subwoofer is said to provide bass all the way down to 32 Hz (-2 dB). "We're finding that our three-piece in-wall system with the subwoofer is being used increasingly in primary applications," said Fred Yando, president of KEF Electronics of America.

Still, a number of audio experts maintain that in-wall speakers re-

quire out-of-wall subwoofers for best results. One of the problems with in-wall subwoofers is that they, too, can create resonance problems in the wall. "At 20 Hz, a plaster wall is acoustically transparent," according to John Bishop, executive vice president of a/d/s/. "The wall will vibrate at those frequencies and transmit the sound. That rattling is not only a coloration, but it is also absorbing energy and taking output away from the speaker." Bishop said a/d/s/ is opting for a different approach by offering fully enclosed subwoofers that can be mounted below a floor or above a ceiling (in support struts for the roof).

If manufacturers continue to refine in-wall sound systems, they may eventually become a threat to the boxes, but for the immediate future they'll probably continue to be used mostly for beautiful background music. Still, there's background, and then there's background. Ideal speakers for the bedroom would tend to be of a higher quality than those used in the kitchen; for the bathroom, the user might be less discriminating about sound, although here a waterproof model is necessary. Since needs tend to vary from room to room, some companies are now offering several options within their wall-speaker lines.

SONANCE, for example, offers the miniature M-30 (measuring 9 x 6½ x 2 inches), a speaker designed for space-tight bathrooms and kitchens, while also providing larger, high-end models such as the Sonance IV (8-inch woofer and 1-inch polydome tweeter). From a/d/s/ there's both a compact in-wall model, the 300i/TR3, and a larger flush-mount speaker with extended bass and smoother overall response, the C400i. The Boston Acoustics Designer Series includes the Model 350, with a 5¼-inch woofer, and the Model 360, with a 6½-inch woofer. KEF's Custom Series includes both two-way and three-way systems, the latter an impressive combination of the flush-mount 10-inch CR250SW subwoofer and a pair of CR200F satellites. Phase-Tech offers three pairs of in-wall speakers for various applications, the CI-20, CI-40, and CI-60, and the CI-SUB subwoofer. Polk has the AB-7, a two-way system with a 6½-inch woofer and a 1-inch dome tweeter, and several



The a/d/s Model 300C (above), a two-way acoustic-suspension speaker, has a standard brushed-aluminum finish, but six colors, with matching grilles and brackets, are available on special order. Price: \$430 a pair.

A 13-inch-square subwoofer, the CR250SW (at right in photo below), is said to give KEF's three-piece in-wall system a response down to 32 Hz. The CR200F satellites have 13 x 10-inch panels. Combined price: \$1,100.



Bang & Olufsen's IWS 100 speaker (below) is priced according to the complexity of the installation. The system is designed to house a B&O Master Control Link and relay box.



The Sonance Model IV lists for \$650 a pair, including installation brackets. The grilles are available in cloth or in perforated metal that can be painted as desired.



more in-wall models are soon to come, including some type of subwoofer.

Bang & Olufsen's ISW 100's each have two 4-inch bass drivers and a 1-inch dome tweeter; the speaker system is designed to house the Master Control Link and relay box for remote operation of a B&O multiroom system. Bang & Olufsen is also in the process of introducing flat speakers that hang on the wall like paintings, an alternative to flush-mounting. Jamo has already moved in this direction with its Jamo Art speaker, a flat system that's roughly the same size and shape as the picture tube of a 20-inch TV set.

How do you choose from among this considerable assortment? It isn't easy, particularly since you may not have an adequate opportunity to sample the differences in sound. Few retailers have substantial in-wall speaker demo areas, although that is beginning to change. For now, you may be dependent on the advice of your dealer—so your best bet is to shop at a very reliable, high-end store. If you let the dealer know exactly how and where you intend to use the speakers and what your budget is, he can give you some guidance.

YOU don't have to spend a fortune for in-wall speakers. A basic pair can be purchased for less than \$200, although such low-end speakers should probably be used only for casual background applications (in a kitchen, bedroom, etc.). For \$400 to \$500 a pair, high-quality speakers can be obtained, though they may still be a little shy on bass. For a top-of-the-line two-way system, or for a three-piece in-wall system with a subwoofer, the cost tends toward the \$1,000 price range, including installation. As Wayne Puntel of Cleveland's Audio Craft stores pointed out, that can be a pretty stiff price for equipment used in a secondary application—and for the same dollars, you could almost certainly get a boxed speaker of superior quality. But some choose to look at it this way: Good style rarely comes cheap, and in-wall speakers are as much about style as sound.

Given the importance of style in this matter, installation becomes a critical factor. While virtually all in-wall speakers have grilles that are sleek and attractive, or at least

inconspicuous, the real beauty is in the placement. To do that right, you will probably need the services of an architecturally aware installer.

The vast majority of in-wall speakers are sold through the custom-installation departments of audio retailers—and installation is usually part of the sale package. That's probably just as well, given the myriad of installation concerns involved with in-wall speakers. Unless you're on intimate terms with the insides of your walls and know a thing or two about wiring, this is not a job you'll want to take on alone. There are practical issues as well as aesthetic ones involved. "Picking the right installer is very important," cautioned KEF's Yando. "When you go to the dealers, take a look at their portfolios to see the kinds of work they've done before."

A GOOD installer will tend to approach the job with an awareness of both sound and appearances. Norman Field, who heads the custom-installation division of Chicago's Columbia Audio/Video, considers the focal points of a room—such as a fireplace—and places the speakers so that "they're congruent with those focal points." Field may try to create visual lines in a room as well; if there are heater vents in the wall, he'll place the speakers at the same height as the vents.

At the same time, Field must consider the position of the listener. "If the installation is in a primary listening area, that will take priority," he explained. "In that instance, you're going to place the speakers at ear level and as far apart as the listener is from the speakers."

That may not sound too complicated, but the actual drilling is what separates the men from the boys in this type of work. An inexperienced driller can end up cracking walls, going through the backside of the wall, cutting holes in the insulation, or even drilling into electrical wires—which can be a *shocking* experience. If you can get by the drilling, the job of actually laying in the speaker isn't too bad. Manufacturers have taken pains with the brackets and bracing that come with today's in-wall speakers, and they can help make speaker mounting much easier.

How much does installation add to the cost of your speakers? For a

simple cut-and-mount job involving one set of speakers, about \$100 or less. Many in-wall customers opt for multiroom installation jobs, however, putting speakers all through the house. The thinking is, as long as you're cutting walls and running wires to one extra room, why not wire up two or three? Naturally, this will tend to double or triple your installation bill.

If you are going to install in-wall speakers yourself, there are some points to keep in mind. When you mount a subwoofer in the wall, it's best to use an exterior wall because it tends to be more rigid than an interior one. But be aware that in *any* wall, a subwoofer is moving air in great volume—a phenomenon that could lead to cracks in the plaster if the volume's too high. Also, never put in-wall speakers next to an air duct. If you do, the duct will "sing," and the music will be heard loud and clear in every room that has a vent leading into that duct.

Finally, if you're connecting multiroom satellites to a single amplifier, be aware of the impedance load. If three or four sets of speakers are operating off that one amp, you risk a blowout. Some installers recommend hooking up a secondary amp, which can be fed through the tape output from the main preamp or receiver. Anyone doing a multiroom setup should know that there's a good selection of switching equipment available from several of the in-wall speaker manufacturers. Sonance's new SDS-4 switcher, for example, can connect four pairs of 8-ohm speakers to a single amplifier and operate them in any combination, from one to all four pairs. Another of the company's new switchers, the ABW1, can be installed in a light-switch box and be covered with a conventional wall plate.

IF the thought of choosing the right in-wall speakers, drilling through the wall, connecting all the wiring and switchers, and trying to make it all look pretty in the end seems a bit intimidating to you, you're not alone. Dealers and manufacturers report that more than 80 percent of in-wall customers turn to professionals for installation help. With the right assistance, though, you can end up with a sound system that you'll be proud to show off—if anyone can see it. □

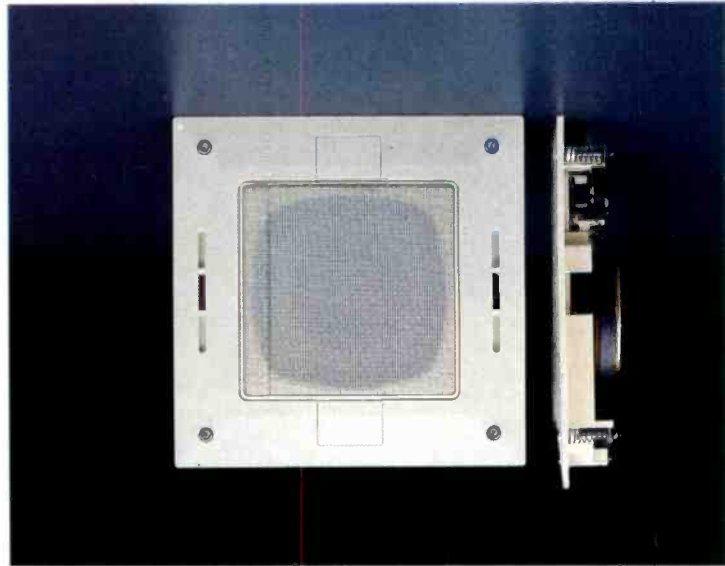


Jamo's versatile Art Wall speaker (above) can be used on or off a wall and as a satellite or a full-range system. It has a 1-inch tweeter and a 5-inch woofer. Price: \$400 a pair.

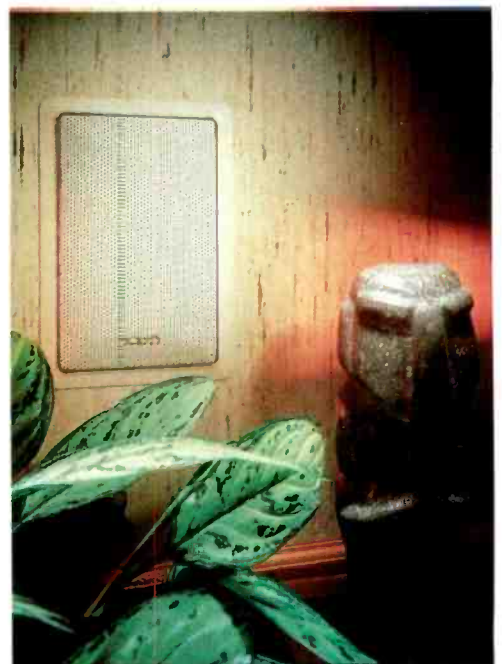


The JBL S-4 is a 12 x 8 3/4-inch flush-mounting speaker with a 1-inch dome tweeter and a 6 1/2-inch woofer. A pair lists for \$295 and can be used alone or with the companion pedestal-mounted S-1 subwoofer.

The OWI Model 2301 "Thindy" speaker can be mounted in a wall or ceiling. It measures 9 inches square and needs only 1 3/4 inches depth. In ivory or black, \$250 a pair.



Polk Audio's two-way AB-7 (below) has a rated response of 30 to 26,000 Hz. The white metal grilles, 6 1/4 x 9 3/4 inches, can be painted to match any decor. Price: \$400 a pair.



SYSTEMS



Updating an entertainment console

by Rebecca Day

GERMAINE HASEROT, a retired concert and opera singer, went to Absolute Sound in Winter Park, Florida, with an unusual request. Her 1961 RCA entertainment console was no longer working properly, and she wanted to replace the radio, color TV set, and record player while preserving the console.

Dave Cheezum, head of custom installation at Absolute Sound, checked with his craftsmen about the feasibility of the project: "They said it was nuts, that it would be too expensive," Cheezum reported. Unfazed, Mrs. Haserot gave the go-ahead and left the logistics to Cheezum. Three weeks and \$3,000 later, her console housed an NAD Model 7220 AM/FM receiver, an NAD Model 6240 cassette deck, a Dual Model 505-2 turntable with Signet Hitech 103 cartridge, an NAD MR20 TV set, a Phase Tech PC30 subwoofer and two PC60 satellite speakers, and a Discwasher Spikemaster surge protector. You'd never know from the outside that the console had changed.

The major challenge on the inside, Cheezum says, was fitting contemporary components into a hi-fi cabinet built over a quarter-century ago. The only place to put the receiver and tape deck, for example, was where the radio had been, on the top right side of the console. In order to make them fit so they'd be operable from the top (there's no

access from the front of the console as there is with today's audio/video furniture), the installer hooked them together with U-brackets, dropped them knobs-up into the hole, and bolted them to the side of the console. The remainder of the hole left by the radio was covered by custom-fitted black-laminate particleboard.

The installer sealed the small satellite speakers in silicone to secure them to the inside face of the console. For better imaging, he laid them on their sides with the drivers pointing out of the speaker openings. He tucked the subwoofer on its side under the right speaker and ported it to the rear, using the wall behind the console as a reflecting surface.

Cheezum chose the 20-inch NAD TV set for ease of use and size. To fill the space left by the original 25-inch set, the installer again used custom particleboard panels. The Dual turntable fit nicely into the space left by the original RCA record player.

Mrs. Haserot, Cheezum reports, is thrilled with the new system. It fits into the console, it is simple to operate, and it passed the ultimate listening tests: playing the operatic recordings she made in New York City in 1938, which were originally on four 78-rpm records and were transferred to LP in the early 1960's. □





THE NEW JAZZ

Today's young "neoboppers" are dedicated musicians with a keen sense of jazz history.

by Chris Albertson



IN the Forties, when someone posed the already old question of what is jazz, Fats Waller allegedly replied, "If you have to ask, you'll never know." If you think it was a tough question back then, imagine how Waller would have responded today when record companies, radio stations, and trade publications indiscriminately attach the "jazz" label to a far greater variety of music.

"The public is definitely confused, but you can't really blame them," said Harry Connick, Jr., a young New Orleans pianist who knows the real stuff and stretches his keyboard from Thelonious Monk back to Jelly Roll Morton. Connick believes the public must be educated. "Nowadays, it isn't enough just to play," he told me. "You must also have something to say, to get your point across. The message must be, 'This is what jazz music is; that



From top, Wynton Marsalis (photo by Marcus DeVoe/Columbia Records), Branford Marsalis (Deborah Feingold/Columbia), Donald Harrison and Terence Blanchard (Anthony Barbosa/Columbia). Right, Harry Connick, Jr. (William Coupon/Columbia).

other stuff is simply not jazz.' That will wake them up."

With alarming regularity, out-and-out pop performances crop up on "jazz" radio programs and in the "jazz" charts of publications that certainly ought to know better. The confusion has probably never been greater than it is today, but it has reigned for some time, so a bit of background may be in order.

Everybody agrees that the music of King Oliver's Creole Jazz Band and Jelly Roll Morton's Red Hot Peppers is jazz, and though the purists of fifty years ago, the so-called "moldy figs," thought otherwise, most fans have no trouble applying the label to the swing idiom. The controversy really started with the post-World War II emergence of bebop, which Cab Calloway called "jujitsu music" and many veteran musicians and fans considered an intrusion. A fierce debate erupted between two factions of fans, the traditionalists and the "modernists." It was played up as Hot versus Cool, or Bix versus Bird, but it really boiled down to promotional ballyhoo, and even bebop's most obstinate detractors eventually came around to accept the new form as jazz. Bebop was cool, but only in the sense that it was "in." The early Fifties then saw the emergence of "West Coast" jazz, an aloof California style that was a bit too frosty for some tastes but became generally accepted. There were now numerous styles of jazz, and cities like Chicago and New York even had their own variant forms, but on the whole the music was fairly well defined in the mind of the public.

The real confusion began at the end of the Fifties, when saxophonist Ornette Coleman opened the door to a free-form style that the adventurous embraced but others simply dismissed as jazz gone sour. Unlike earlier developments, free jazz really was a major breach of jazz tradition, but Coleman's unchained style was not the flash in the pan many people thought it would be. Not only did it establish him and a few of his disciples as important figures, but it also fostered other styles, among them the so-called "avant-garde" movement, which featured a form so free that it was impossible to distinguish an intentional note from one that wasn't.

Though largely inaccessible to ears accustomed to hummable melodies, the freewheeling avant-garde

style at least offered the element of surprise that so sharply characterized the earliest jazz forms. To the general public, however, the toots and squeaks typical of this music were not pleasant surprises, and the style never caught on. Audiences were more interested in groups like the Cannonball Adderley Quintet and the Art Farmer-Benny Golson Jazzette, groups that stomped onto the scene with a funky, highly rhythmic, gospel-tinged style that label makers were quick to dub "soul jazz." To some fans, this period of churchly romps represents the last of the red-hot jazz eras. With it jazz more or less bid college campuses goodbye, and the Beatles grabbed a generation of would-be jazz fans.

Enter the Flower Generation, and—with the Seventies—re-enter Miles Davis. A major force behind the "cool" jazz movement twenty years earlier, Davis donned the new generation's garb and zeroed in on the long-haired, love-beaded Fillmore crowd, blowing their way a cosmic blend of jazz and electronic funk. We called it "fusion" jazz, and it remains with us even as the Eighties draw to a close.

As settled-down yuppies, a great number of Flower Generation graduates think of themselves as jazz fans, but it isn't Morton, Armstrong, Bird, or Monk that vibrates their high-priced speakers; more often it's fusion twice removed, a bland hybrid called "New Age." But now we have an exciting alternative—fresh, real jazz, not a diluted substitute. Now we have the neoboppers, a group of dedicated young jazz musicians with a keen sense of history and a zealous respect for the great forefathers of jazz.

These young keepers of the flame include Connick, Wynton and Branford Marsalis, Terence Blanchard, Donald Harrison, Mulgrew Miller, and Lonnie Plaxico. All are spirited players, and many of them gained prominence as members of Art Blakey's Jazz Messengers. Interestingly enough, a good number of these musicians hail from New Orleans, the original cradle of jazz, and they seem to have a clear mission: to uphold the artistic excellence and soul of this music, to make it pure again.

Saxophonist Branford Marsalis, whose own Columbia albums contain only the purest jazz ingredients but who also enjoys success with Sting's pop group, told me he



From top, Cannonball Adderley, Ornette Coleman (photo by Francis Wolff/Blue Note), Miles Davis (Anthony Barbesa/Columbia), Charlie Parker, Art Farmer (Nancy Ellison/Contemporary).

doesn't think there is any great upsurge in jazz interest. He blames the current confusion about jazz's identity on ignorance and mental laziness: "I think that when a guy gets to be twenty-three or twenty-four and he gets his first job, and he makes \$40,000 a year, he suddenly says, 'I can't listen to pop music any more. I'm too old for that. I have to mature.' So what does he go and get? A pop record without words, and they call that a jazz record. Americans don't want to spend any time listening to something that will make them think, and jazz is a thinking person's music."

Yet, just as the one-fingered rock-and-roll style of the Fifties stirred up a backlash and made young music fans look to jazz as a respectable alternative, so the keyboard ramblings of George Winston and the buzz of Kenny G's souped-up saxophone may well be catalysts for a renewed interest in the brand of straight-ahead acoustic jazz played by the new breed of purists.

DESPITE his own success, Marsalis is skeptical. "Yes, we've got an audience," he conceded, "but when you go and see Harry [Connick, Jr.] at Knickerbockers, all these people talk while he plays, then clap, and at the end of the songs they tell him how good he is. People read an article on you, or they see you on a morning news program, so they show up when you perform, but they are not necessarily into the music.

"You do a gig in, say, Blues Alley [a popular Washington, D.C., jazz spot], and the first set is the Young Republicans. They sit around in their very conservative suits and their very conservative ties, and they expect to hear something like *Hello Dolly*, especially from me, because I tell a lot of jokes. They say, 'Oh God, he's funny,' and prepare to laugh throughout the show. I may give them a line or two that's funny, but there's nothing funny after that because the music is what it is. So they sit there and they look at each other, then they just start talking and eating, and doing whatever, and we become background music. The second set is about fifty-fifty, a mixture of the Young Republicans who couldn't get into the first set and the

hip people who don't want to stay out late. The third set is almost always just the hip people."

Perhaps we are not seeing a major renaissance of acoustic jazz, but the work and dedication of these young musicians *is* having an effect on less dedicated colleagues. Recently, even some of the most plugged-in fusioners have been known to yank their electric cords from the wall and bop along the acoustic trail. If enough of them do that, who knows? Perhaps the public will discover that saxophones don't all have to sound the same, that instruments have individual tone qualities, and that it can be quite stimulating to hear music that challenges the mind.

"I like to challenge myself," said Connick, who started playing on Bourbon Street when he was six. "When I think about what Trane [John Coltrane] did, what Bud Powell and Art Tatum did, I realize that they worked too hard on this music for me to waste my chance to do anything by playing something that doesn't challenge me. I have to respect those men for doing what they did and to try to understand them—so I'm dedicating my life to that."

"All music is a challenge for a little while," said Marsalis, "but jazz is the only music that is *always* a challenge. Every time I listen to a Sonny Rollins record I am humbled—it's such beautiful music. The first record that made me turn on to jazz was Charlie Parker's *April in Paris*. What is more beautiful than Charlie Parker playing *Summertime*? Not a lot, man, not a lot."

No one is saying that there isn't a place for fusion and New Age music, just that these forms should not be called jazz, even when their exponents are as closely identified with jazz as, say, Herbie Hancock. The new school of jazz players would like to see critics, disc jockeys, and booking agents treat jazz more objectively and be unafraid to criticize those who stray from its fold. "Sometimes you *have* to drop bombs in order to wake people up," Connick said. "I am, of course, referring to Wynton, but he is totally justified in what he does."

Trumpeter Wynton Marsalis, brother of Branford and unofficial leader of the pack, is the most visible member of the neoboppers. A calm, outspoken man, he does not mince words when it comes to criti-

cizing the jazz establishment or even some of his revered colleagues. This has not exactly endeared him to party-line jazz critics and the people who run today's record industry, but it has made him a hero of sorts within his own generation. There was an uproar when he openly criticized Miles Davis for downgrading his music and surrounding himself with sidemen of inferior talent; whether Marsalis was right or not, his expressed views were regarded by many members of the jazz press as arrogance—certain jazz figures are sacrosanct.

B

UT "Wynton never personally slandered anybody," Connick explained. "He was only cutting down the types of music they play. Somebody has to speak up, and the press is constantly abusing him for doing that. He's been laying low now, but he told me he's getting ready to do it again, to give interviews. I said, 'Good, let me be a major in your army, General Marsalis.'"

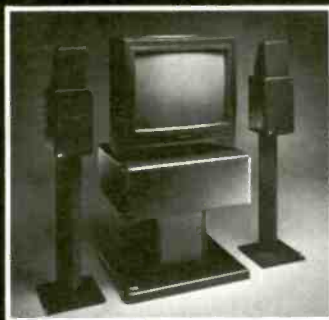
Only time will tell if the Blanchards, Marsalises, and Connicks can turn the public taste around, and they will probably not succeed without help from those who run the business of jazz. "Most record-company executives never profess to be anything else but accountants," said Branford Marsalis. "That's what kills me about the record industry. Here I am sitting down with a guy who has a law degree, and he's going to tell me about music. I find that to be the most humorous thing of all. I mean, I don't even find it offensive—I find it hilarious. But they sign guys like us to the label because jazz gives them prestige."

The frankness of these young players is as refreshing as their music, and you have to admire their dedication to jazz. "I spoke to [promoter] George Wein the other day," Connick recalled, "and I said, 'Man, how come you put people like Grover [Washington, Jr.] and Kenny G on your festivals? Why don't you book some straight-ahead jazz?' He said, 'What *is* straight-ahead jazz now? What is jazz music? I don't know what it is. I just try to make money now.' What happened to the music?" □

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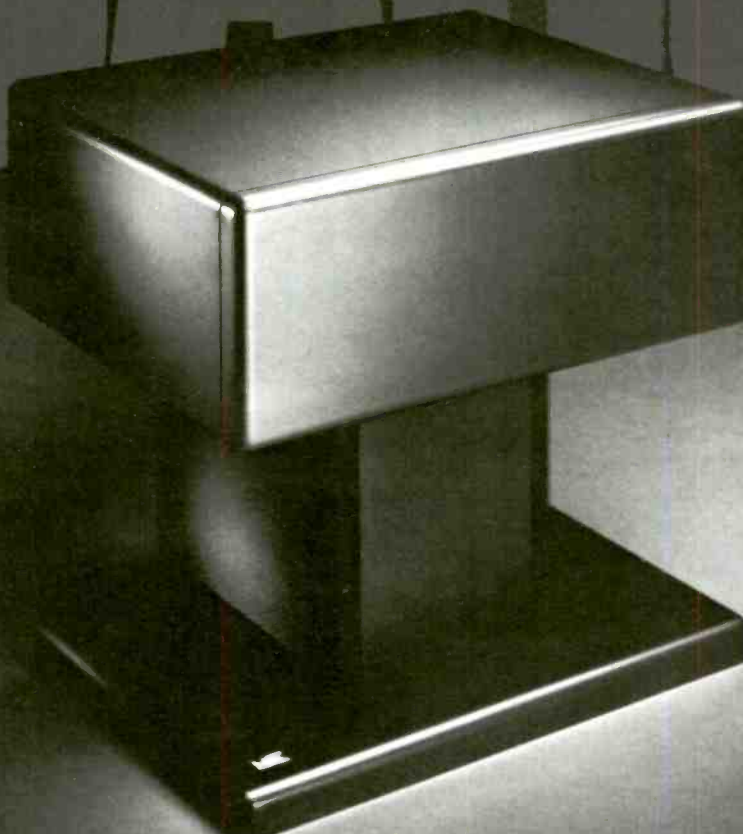
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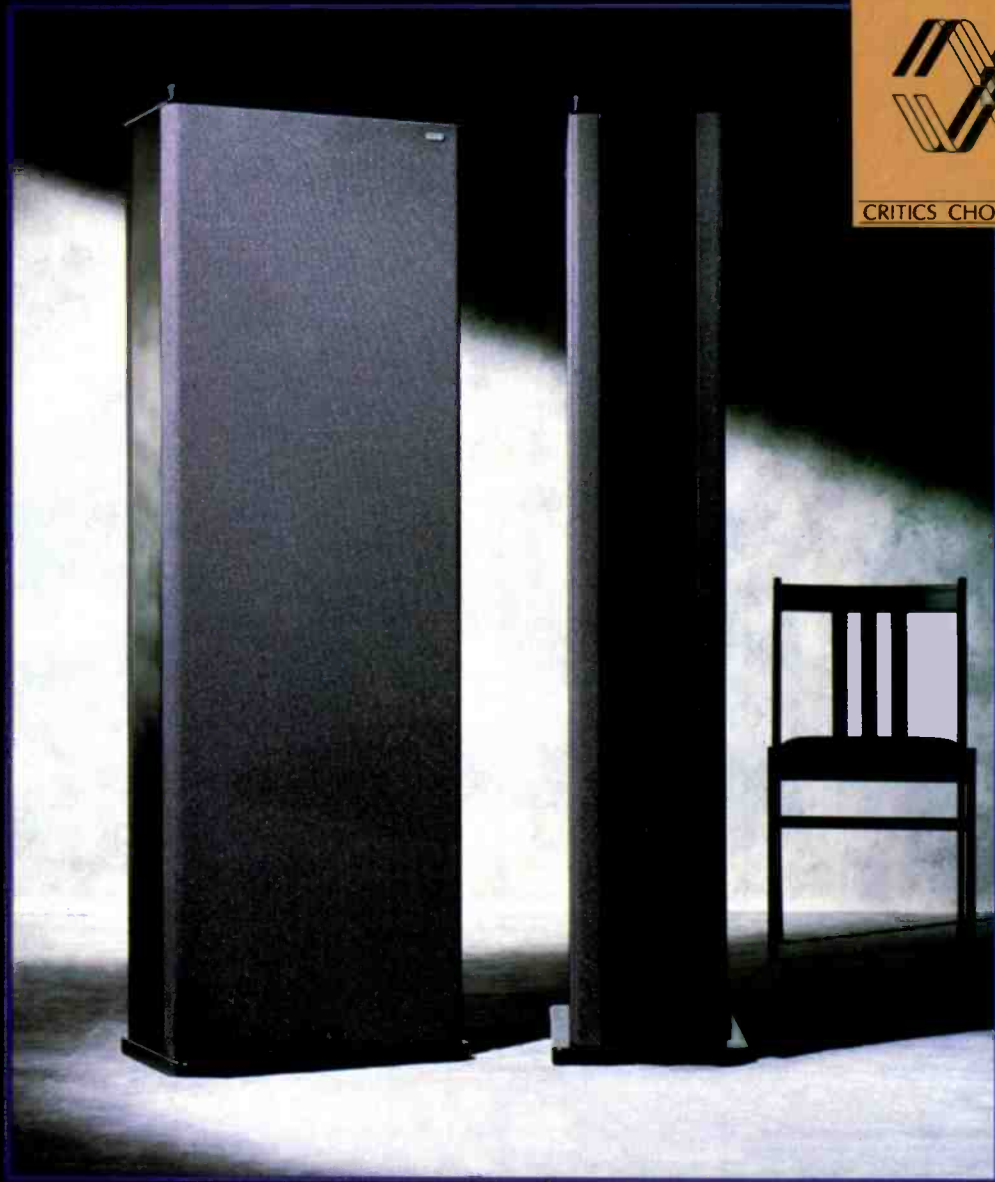
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BEST RECORDINGS OF THE MONTH

Stereo Review's critics choose the outstanding current releases

LUCINDA WILLIAMS: REAL

THE first time I played the new Lucinda Williams album, I started to think about my late colleague Noel Coppage. Noel used to keep a list in these pages of what he called "Real People," an appellation that had nothing whatsoever to do with the early-Eighties TV show. He was talking about performers, specifically musicians. To my knowledge, Noel never heard Lucinda Williams, although she's knocked around for over a decade, but if he had, or if he'd lived to hear her remarkable record, I'm sure he would have added Williams to his small, select list. This woman is as real as it gets.

The idiom is basic rock, country, and blues. The songs, all written by Williams except for one by Howlin' Wolf, are anecdotal, sharply ob-

served, and by turns wry and poignant. But what makes them really special (not to discount the fine performances by her obviously simpatico band) is Williams herself. She has the kind of voice that suggests the rise and fall of empires as witnessed through the bottom of a shot glass. It's an instrument worthy of the Bonnie Raitt comparisons it most often draws, but there's an edge to Williams's singing, a raw, wounded, and utterly soulful quality, that also suggests a male honky-tonker like Gram Parsons. As a result, Williams really doesn't sound like any other woman rocker currently working, and listening to her album was an experience that hit me about as hard as falling in love.

There are moments in "Lucinda Williams" that verge on the merely ordinary. *Crescent City*, for example, rocks along quite nicely and is obviously felt, but it's a fairly prosaic reminiscence nonetheless. Mostly, though, the music will make you laugh (*Changed the Locks*) or break your heart (*Abandoned*), sometimes both in the same song (*Passionate Kisses*). Even in an era when it's suddenly, suspiciously, fashionable to be a smart solo woman in rock, Lucinda Williams is clearly something special, and I suggest you hear

her immediately. Meanwhile, Noel, I think we've got another Real Person here.

Steve Simels

LUCINDA WILLIAMS: Lucinda Williams (vocals, guitar); Gurf Morlix (vocals, guitars); Dr. John Ciambotti (bass); Donald Lindley (drums); other musicians. *I Just Wanted to See You So Bad; The Night's Too Long; Abandoned; Big Red Sun Blues; Like a Rose; Changed the Locks; Passionate Kisses; Am I Too Blue; Crescent City; Side of the Road; Price to Pay; I Asked for Water (He Gave Me Gasoline)*. ROUGH TRADE US 47LP, © US 47MC, © US 47CD (39 min).

BLOMSTEDT'S RESPLENDENT STRAUSS

WITH some twenty versions of *Also sprach Zarathustra* currently listed in Schwann, any further attempt at this most brilliant of the Strauss tone poems had better have something special going for it besides blockbuster sonics. Happily, Herbert Blomstedt's performance in a new Denon recording, notable for magnificent playing by the Dresden Staatskapelle and the striking acoustic surround of the city's Lukaskirche, offers a memorable musical experience. While there is plenty of brilliance and power in both performance and sonics, the blockbuster aspect is incidental to a presentation that is intensely lyrical and poetic.

Blomstedt takes the opening more broadly than usual, and as the music unfolds he exercises the greatest care with inner melodic strands and details of coloration. The fugal matter at the center of the opening section is first slow and somber, then fast and fierce, achieving an overwhelming impact at the climax with the "sunrise" motive. Much of what follows emerges with stunning brilliance, and the enigmatic epilogue is done with an almost Classical poise and sensitivity.

Also sprach Zarathustra is coupled with a *Don Juan* that is on the same high level. The opening is superbly articulated, and the ensu-

Lucinda Williams: raw, wounded, and soulful



GREG ALLEN/ROUGH TRADE

BEST RECORDINGS OF THE MONTH

SAN FRANCISCO SYMPHONY



Herbert Blomstedt: intensity

ing lyrical episode has a touch of decadence that makes it more than just a pretty melody. The passage leading to the final catastrophe moves with blistering intensity. In short, Blomstedt delivers two Strauss interpretations that are colorful and highly dramatic, yet impressively controlled. The sound is not as close up as in most other recordings, but on its own acoustic terms it is most impressive.

David Hall

R. STRAUSS: *Also sprach Zarathustra, Op. 30; Don Juan, Op. 20.* Dresden Staatskapelle, Herbert Blomstedt cond. DENON © CO-2259-EX (51 min).

MICHELLE SHOCKED: MESMERIZING

THE dramatic black-and-white cover photo of Michelle Shocked's highly acclaimed studio-album debut, "Short, Sharp, Shocked," in which the singer is being restrained—and, yes, half strangled—by a uniformed policeman at a political demonstration, is at first off-putting. It suggests a satiric comedy album, perhaps, or the fraudulent work of a creative art director. But the photo, taken in 1984 at a San Francisco protest against a company that allegedly manufactured Agent Orange, is for real. And it says a lot about Michelle Shocked,

who at twenty-six fills her record-company bio with exotic tales of fleeing her East Texas Mormon home at sixteen, falling into the hard-core San Francisco punk scene, hitching to New York and Amsterdam, and becoming involved in squatter's movements and the politics of the homeless—and later being committed to a psychiatric hospital in Dallas "until the insurance money ran out."

"Michelle is a legitimately eccentric girl," according to her producer, Pete Anderson. And her list of self-descriptions—"feminist, anarchist, skateboard punk rocker, carpenter's apprentice, rape victim, storyteller"—bears her out.

One spin through her album, however, reinforces that idea better than any list or comment ever could. Picking up where her first, homemade LP, "The Texas Campfire Tapes," left off, "Short, Sharp, Shocked" is an album of electrifying vision and range. It pays homage to the oral folk tradition of Woody Guthrie and the Texas poetry of Guy Clark and at the same time recasts the macho beat rhythms of Jack Kerouac into a hard-edged humanist cry.

Shocked segues through nine original songs and one cover (Jean Ritchie's *The L&N Don't Stop Here Anymore*) in a mesmerizing manner. Using the folk singer's familiar train motif to tie the eclectic material together, she turns autobiographical one minute—in *Memories of East Texas* and *(Making the Run to) Gladewater*—and surreal the next. *When I Grow Up*, the stunning opener, features acid-trip imagery (about giving birth to 120 babies) hung over African sound effects and a menacing bass line. But dreamy visions soon turn into urban nightmares: *Graffiti Limbo* is a requiem for Michael Stewart, a black youth who died in police custody after he was arrested for spray-painting a New York subway car.

Michelle Shocked is a writer and performer of sizzling personality and power, but much of the credit for the record's brilliance must go to producer Anderson, known primarily for his work with Dwight Yoakam. Here he spikes Shocked's coffeehouse-guitar sound with deft

and subtle twinings of hammered dulcimer, banjo, mandolin, dobro, fiddle, and drums, steering the backing far afield from anything remotely formulaic. The instrumental framework shimmers with ingenuity and intrigue, mirroring the lyrics, and Shocked's somewhat subversive view of life, in superb little unexpected turns and trills—a wailing blues harp imitating her mournful alto in *Graffiti Limbo* and a million birdlike chirps of sound in *When I Grow Up*.

Even when the record is off the turntable, certain of these songs come home to roost. Foremost among them is *V.F.D.*, her bebop memoir of childhood, when



Michelle Shocked: vision

Shocked and her friend Eddy whiled away their summer boredom setting fires in the field and then racing to stamp them out ("Doin' the toe and heel"). One day, predictably, the flames licked out of control, and by the time the Volunteer Fire Department showed up, the field and sky were black. "We was just racing inevitability," Shocked explained to her mother. And for Shocked, whose album proves her to be a fire starter of the first order, fame looks just as inevitable. *Alanna Nash*

MICHELLE SHOCKED: *Short, Sharp, Shocked.* Michelle Shocked (vocals, acoustic guitar); Pete Anderson (electric guitar, six-string bass); other musicians. *When I Grow Up; Hello Hopeville; Memories of East Texas; (Making the Run to) Gladewater; Graffiti Limbo; If Love Was a Train; Anchorage; The L&N Don't Stop Here Anymore; V.F.D.; Black Widow.* MERCURY 834 924-1, © 834 924-4, © 834-924-2 (34 min).

BETH B./POLYGRAM RECORDS

ZIMERMAN'S BRILLIANT LISZT

THE new Deutsche Grammophon recording of the two Liszt piano concertos by Krystian Zimerman and the Boston Symphony under Seiji Ozawa represents a significant breakthrough. Ever since the Sviatoslav Richter recording with Kiril Kondrashin and the London Symphony was released on LP by Philips in 1962, it has been the version against which all subsequent ones have been measured. Its sound quality, however, did not stand up well in the transfer to CD, and that has left the field open for a really brilliant successor. The Zimerman is it.

Heretofore I would not have associated Zimerman with Liszt, but rather with Chopin, first of all, and with Mozart and other repertoire that often calls for such adjectives as "poetic" and "exquisite." Not that Liszt is without poetry or delicacy (or Mozart or Chopin without power), but his concertos, the First in particular, veer toward a more muscular category, and the *Totentanz*, which fills out the new disc, is an out-and-out barnstormer. Zimerman makes no attempt to downplay that aspect of the music but sails

Krystian Zimerman: bravura poetry



BROWNIE HARRIS/SHUNAN ASSOCIATES

into it on its own terms. Subtlety is not exactly abandoned, but it is not thrown in the face of a storm. The playing is big and bold and even stupendous—certainly not understated, but for this music not overstated either. There are flashes of poetry in the Second Concerto and the inner movements of the First, because Liszt put them there, and Zimerman knows exactly how to make those moments glow.

Zimerman is not the first pianist to show that it's possible to be both a bravura player and a poet—just pull out any of Jorge Bolet's Liszt recordings or some of Alfred Brendel's, or the one solo disc by the remarkable Minoru Nojima—but what a downright dazzling set of performances this is! It's playing in what used to be called "the grand manner," and its sense of sweep, spontaneity, and risk-taking is combined with an absolutely rock-solid technique that adds to the excitement by obviating the need for "making allowances." When the music must caress the ear it is "exquisite," but when it must roar it really roars.

There is nothing hokey or tongue in cheek in the ferocity of the *Totentanz* here; Zimerman obviously relishes it for the full-blooded assault it is. The intensity and flexibility of his playing, in both its hair-raising and seductive facets, made me think of Zimerman as a sort of Mengelberg of pianists, but the Mengelberg role is actually filled by Ozawa, in perhaps the most sympathetic partnering any conductor has provided in recordings of these works, and the Boston Symphony is in absolutely glorious form. The recording itself represents a high mark for DG: Every thundering or whispering note from the solo instrument and the orchestra is marvelously clear and in ideal perspective, and the unusually rich low end adds to the allure without dampening the power. A triumphant and irresistible record. *Richard Freed*

LISZT: Piano Concerto No. 1, in E-flat Major; Piano Concerto No. 2, in A Major; Totentanz. Krystian Zimerman (piano); Boston Symphony Orchestra, Seiji Ozawa cond. DEUTSCHE GRAMMOPHON © 423 571-4, © 423 571-2 (56 min).

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- **MILHAUD:** *Saudades do Brasil; Le Printemps; Trois Rags-caprices.* NONESUCH 71316-2. "Irresistible" (Best of Month, February 1976).

*Discs and tapes reviewed by
Chris Albertson, Phyl Garland,
Ron Givens, Roy Hemming,
Alanna Nash, Parke
Puterbaugh, Steve Simels*

TOM COCHRANE AND RED RIDER: *Victory Day*. Tom Cochrane (vocals, guitars, keyboards); Red Rider (instrumentals). *Big League; Sons Beat Down; Different Drummer; Saved by the Dawn; Good Times; Calling America*; and four others. RCA 8532-1-R, © 8532-4-R, © 8532-2-R (41 min).

Performance: *Earnest*
Recording: *Very good*

His homeland may be Canada, but Tom Cochrane is definitely a heartland rocker. The moral of his stories—hope and heroism in hard times—recalls the work of John Cougar Mellencamp, Bob Seger, John Cafferty, and others in that line. Cochrane's journalistic background gives him a verbal facility that's up to the challenge of writing about winners and losers, moral conundrums, good and bad times—in short, the resilience of the human spirit when it's put to the test.

Basically, he's a bright guy with a guitar who's following the Mellencamps and Segers through the amber waves of grain, measuring the North American dream (it's Canada's no less than our own) against the less glittery reality. It's a well-trod path, and Cochrane is not exactly a trailblazer, but his songs are thoughtful, and they blow wide open on the choruses. (Not surprisingly, Mellencamp's producer, Don Gehman, worked on this record.) Overall, "Victory Day" is accomplished and well meaning, although Cochrane and his back-up band, Red Rider, could stand to loosen up more often, the way they do in *Vacation (In My Mind)*. It's nothing more than a cool, rocking tune, but sometimes that'll do just fine. *P.P.*

BARBARA COOK: *The Disney Album*. Barbara Cook (vocals); instrumental accompaniment. *Some Day My Prince Will Come; Give a Little Whistle; Lavender Blue (Dilly Dilly); The Second Star to the Right; I'm Late; When I See an Elephant Fly; Pink Elephants on Parade; When You Wish upon a Star*; and six others. MCA CLASSICS MCA-

6244, © MCAC-6244, © MCAD-6244 (43 min).

Performance: *Invigorating*
Recording: *Nice*

Of all the presents gathered on the party table for Mickey Mouse's sixtieth birthday last year, Barbara Cook may have brought the most spectacular. "The Disney Album" simply weds one of the most glorious voices of the twentieth century with some of its most enduring and best-loved songs. Backed by Wally Harper's grand, lush orchestral arrangements, Cook applies her shimmering voice to Disney movie music both familiar and obscure. The comedic songs, *I'm Late* (from *Alice in Wonderland*) and *Pink Elephants on Parade* (from *Dumbo*), are especially pleasing. Occasionally a certain stuffiness creeps in—largely because of Harper's arrangements—that may temporarily alienate children and adults alike. For the most part, though, "The Disney Album" is a true charmer. *A.N.*

STEVE EARLE: *Copperhead Road*. Steve Earle (vocals, guitars, harmonica, six-string bass, mandolin); Maria McKee, others (background vocals); vocal and instrumental accompaniment. *Copperhead Road; The Devil's Right Hand; Johnny Come Lately; Even When I'm Blue; Waiting on You; Nothing but a Child*; and four others. UNI/MCA UNI-7, © UNIC-7, © UNID-7 (43 min).

Performance: *Stretching out*
Recording: *Very good*

In his first two records, "Guitar Town" and "Exit 0," Steve Earle often pushed the country genre to the limit, threatening, like a wild man fighting a strait jacket, to rip into fierce, dead-ahead rock. In "Copperhead Road," he makes good on that threat: While still featuring some of Earle's country-oriented storytelling and traditional country instru-

Steve Earle: root-level rock



mentation, it's billed as a rock vehicle, or, as Earle sees it, as a logical progression from the previous albums.

Recorded not in Nashville but in Memphis, "Copperhead Road" recalls the classic sounds of root-level rock-and-roll as well as making obvious references to Earle's two biggest rock influences, Bruce Springsteen and John Cougar Mellencamp.

But as ambitious as this project is, the album comes off more like a country singer's Led Zeppelin fantasy than a legitimate rock effort. While stylistically Earle is still a country singer, he attempts to alter his distinctly rural phrasing for a number of the harder cuts, sounding different almost every time and leaving the listener confused about just who he is musically. And where "Guitar Town" and "Exit 0" brilliantly illuminated the lure and the loneliness of the road and the frustrations of small-town life, "Copperhead Road" scattershots its message, often trading poignancy for posturing or, as in *Snake Oil*, carrying some tedious political observations.

Not surprisingly, Earle is best both lyrically and vocally in the more country-oriented material, constructing three- and four-minute dramas and tragicomedies set to music. He delivers the most powerful recording yet of his much-covered *The Devil's Right Hand* and raises goose pimples with *Johnny Come Lately*, a song that documents the changing image of the American GI, performed in a sprightly collaboration with the Anglo-Irish punk-folk group the Pogues.

There are other gems here, particularly Earle's Christmas-themed duet with Maria McKee, *Nothing but a Child*, and the vivid imagery of backwoods moonshiners in the title offering. In cuts such as these, Earle proves himself a hillbilly existentialist of the first order. Whether he will someday evolve into a formidable rock-and-roll street rat—or why he even wants to—are questions best left unanswered. *A.N.*

SHEENA EASTON: *The Lover in Me*. Sheena Easton (vocals); vocal and instrumental accompaniment. *No Deposit, No Return; The Lover in Me; Follow My Rainbow; Days Like This; One Love; Cool Love*; and four others. MCA MCA-42249, © MCAC-42249, © MCAD-42249 (50 min).

Performance: *Okay*
Recording: *Okay*

This record sounds very much like most of the successful dance music you hear these days, and for a very good reason. Sheena Easton is a good singer with a new record label, and she's been given special treatment—that is, the usual approach adopted for dance music, only

EXPLANATION OF SYMBOLS:

- = DIGITAL-MASTER LP
- Ⓢ = TAPE CASSETTE
- Ⓢ = COMPACT DISC (TIMINGS ARE TO NEAREST MINUTE)

with big names. A number of successful dance-music producers—L. A. Reid, Babyface, Jellybean Benitez, Angela Winbush—were hired to give her hit-making productions, and her good buddy Prince worked on a couple of tunes as well. The treatment may have achieved the intended result, dance hits, but “The Lover in Me” has all the individuality and flavor of processed cheese. R.G.

NANCI GRIFFITH: *One Fair Summer Evening*. Nanci Griffith (vocals, acoustic guitar); vocal and instrumental accompaniment. *Once in a Very Blue Moon; Looking for the Time (Workin' Girl); Deadwood, South Dakota; I Would Bring You Ireland; Roseville Fair; Trouble in the Fields; Love at the Five and Dime*; and five others. MCA MCA-42255, © MCAC-42255, © MCAD-42255 (41 min).

Performance: *Change of pace*
Recording: *Excellent remote*

Anyone exposed to the music of folk-billy singer Nanci Griffith will likely find her either among the most moving and intelligent of the current country newcomers, worthy of inclusion in the small group of writers and performers known as Nashville's New Integrity, or else insufferably mannered and precious. In her new album, recorded live at the Anderson Fair Retail Restaurant, something of a landmark in Houston, Griffith demonstrates why the camps divide so radically.

With only a keyboardist, bassist, and harmony vocalists augmenting her winning acoustic-guitar work, Griffith sets up an intimate atmosphere in the club where she originally learned her trade. Of the twelve songs here, only two are new (*Deadwood, South Dakota* and *I Would Bring You Ireland*), but most of them will still be unfamiliar to those fans who recently came aboard with her MCA albums and never heard the more interesting Rounder releases.

While Griffith here presents much of her best-loved material, she diminishes its beauty and impact by rushing through most of the performances in a manner surprisingly devoid of feeling. Far more irritating, however, is the way in which she introduces her songs. While some of the stories she tells are inherently funny and add to the audience's appreciation of the songs, she delivers these introductions in a painfully exaggerated Texas twang, using a baby-fine voice reminiscent of the gently dizzy Georgette Baxter from the old *Mary Tyler Moore Show*. This voice, which bears no semblance to the way Griffith speaks off stage, jars when set against her powerful singing voice and confuses the listener as to the honesty of her intentions. That aside, Griffith is



FAIRGROUND ATTRACTION

WHAT a wonderful thing it is to find the new in the old and make it your own, as Fairground Attraction has done in “The First of a Million Kisses.” An utterly contemporary throwback, the quartet plays a glorious fusion of swing jazz and heartthrob pop. Their new album sounds as fresh today as it would have thirty years ago.

At the core of this musical time machine is a singer, Eddi Reader, who has some of the vocal qualities of Bonnie Raitt and much of the expressive power of Rickie Lee Jones, but who swings and croons in a way that is all her own. The instrumental accompaniment is spare but irresistible. The group's primary songwriter, Mark E. Nevin, plays guitars, Simon Edwards jazzes things up on guitaron (an acoustic bass instrument), and percussionist Roy Dodds gives it all spark.

At times Fairground Attraction plays with the fury and grace of Benny Goodman's small groups—lean, bouncy, tightly wound yet uncoiling like an exquisite timepiece. Ballads come slowly, drawn out like a deep sigh. A few songs have a rich theatrical quality. *Moon on the Rain* is a sad gallumph,

with guitar, bass, and percussion playing a ponderous lockstep, until Reader sings about the music that “played in our hearts,” inspiring a glistening crescendo of mandolin, accordion, and glockenspiel. These effects contrast sharply with the generally restrained quality of the music, making them all the more effective. In *Find My Love*, Nevin, a delicate wordsmith, etches longing with the lines, “There must be someone like me/Sitting lonely as a boat out there.” Occasionally the lyrics are too precious, but the arrangements are so understated that everything balances out. “The First of a Million Kisses” is an altogether exhilarating debut. Ron Givens

FAIRGROUND ATTRACTION: *The First of a Million Kisses*. Fairground Attraction (vocals and instrumentals); vocal and instrumental accompaniment. *A Smile in a Whisper; Perfect; Moon on the Rain; Find My Love; Fairground Attraction; The Wind Knows My Name; Clare; Comedy Waltz; The Moon Is Mine; Station Street; Whispers; Allelujah; Falling Backwards* (CD only); *Mythology* (CD only). RCA 8596-1-R, © 8596-4-R, © 8596-2-R (48 min).

ANITA BAKER ON LOVE



ANITA BAKER'S much-anticipated new album, "Giving You the Best That I Got," has everything—superbly lustrous and passionate singing, polished arrangements that include occasional flashes of fine jazz piano, and a high-quality production—everything, that is, except songs that immediately knock you off your feet. There's nothing here quite like the first two selections in her previous set, "Rapture," the hit *Sweet Love* and the exquisite *You Bring Me Joy*, which were so stunning it was hard to move past them.

That's not to say that the songs in the new album aren't a far sight better than most. Indeed, *Good Enough*, a Brazilian-flavored morsel that Baker wrote with the exceptionally talented James McBride, comes close to matching those earlier standouts. Its sinuous melodic lines challenge the singer to extend her vocal technique with improvisations reminiscent of Sarah Vaughan—and Baker has the voice for them, too. Other highlights include *Good Love*, which has a lilting sensuality that's just

about irresistible, and *Lead Me into Love*, with a lush piano introduction that provides a perfect setting for Baker's subtle, well-judged interpretation.

Nearly every song here, in fact, is about love, and Baker invests every one with depths of meaning through the gorgeous sound of her voice and her utterly distinctive style. She never simply attacks a note; she insinuates her way into it, leaning against it before caressing it in full-throated flourishes.

There are many sweet moments in "Giving You the Best That I Got," and a high quality of musicianship prevails throughout. It's a record that will make you smile appreciatively, even if you don't succumb to, well, rapture.

Phyl Garland

ANITA BAKER: *Giving You the Best That I Got*. Anita Baker (vocals); vocal and instrumental accompaniment. *Priceless*; *Lead Me into Love*; *Giving You the Best That I Got*; *Good Love*; *Rules*; *Good Enough*; *Just Because*; *You Belong to Me*. ELEKTRA 60827-1, © 60827-4, © 60827-2 (37 min).

indeed a gifted storyteller, and her performance here of *Love at the Five and Dime*, a hit for Kathy Mattea, is nothing short of spellbinding. With this beautifully recorded set, Nanci Griffith remains one of the most enigmatic, polarizing artists in contemporary country music.

A.N.

THE JIMI HENDRIX EXPERIENCE: *Radio One*. The Jimi Hendrix Experience (vocals and instrumentals). *Stone Free*; *Radio One Theme*; *Day Tripper*; *Killing Floor*; *Love or Confusion*; *Drivin' South*; *Catfish Blues*; *Wait Until Tomorrow*; *Hear My Train a Comin'*; and eight others. RYKO © RCD 20078 (59 min).

Performance: *Wow!*

Recording: *Period mono*

These are performances that the Jimi Hendrix Experience did for British radio in 1967, fairly early in the band's career, when they were still young and hungry and relatively unscathed by drug abuse. (To give you some historical perspective on how long ago that actually was, consider that the BBC hadn't yet learned to record in stereo.) For my money, this period was arguably their peak—Hendrix himself was still paying nominal obeisance to the hit single rather than heading off, as he would later, into the noise-rock stratosphere—and while there are more impressive live recordings of the Experience (the "Jimi Plays Monterey" album, for instance), there are few that are as much fun.

As a later generation would put it, loud and fast rules here. There are some wonderfully brash and virtuosic takes on the blues (a *Hoochie Koochie Man* that has to be heard to be believed), an unselfconscious nod to a Presley classic (*Hound Dog*) that Jimi's hippie audience probably thought was fatally uncool, and even a fire-breathing version of the Beatles' *Daytripper* in which some folks profess to hear an uncredited John Lennon on background vocals. The sound, of course, is tinny (although Ryko's digital remastering is a vast improvement on the bootlegs that have appeared of some of this material), but the for-the-hell-of-it spirit more than compensates. Wonderful stuff, and not just for Hendrix completists, either.

S.S.

ETTA JAMES: *Seven Year Itch*. Etta James (vocals); instrumental accompaniment. *I Got the Will*; *Jump into My Fire*; *Shakey Ground*; *Come to Mama*; *Breakin' Up Somebody's Home*; and five others. ISLAND 91018-1, © 91018-4, © 91018-2 (37 min).

Performance: *Authentic r-&b*

Recording: *Good*

"Seven Year Itch" offers anyone too young to have been around during the Fifties and early Sixties, when Etta James was one of the ruling queens of

rhythm-and-blues, a new opportunity to savor the gritty reality, strutting spirit, and downright infectiousness of her music. Before the arrival of electronic equipment that could make small voices sound big, there were artists like Etta James, artists whose full-bodied sound and powerful delivery required no electrical manipulation. The magic of that era is recaptured in this new recording. From the pulsing bass to the sassy horns and bluesy guitars, this is real "soul" music as it is seldom heard any more. If you want to know what r-&-b is all about, just listen to Etta James belting out *Come to Mama*, *Damn Your Eyes*, and *Breakin' Up Somebody's Home*. P.G.

KIX: *Blow My Fuse*. Kix (vocals and instrumentals). *Get It While It's Hot*; *Boomerang*; *Cold Blood*; *Dirty Boys*; *No Ring Around Rosie*; and five others. ATLANTIC 81877-1, © 81877-4, © 81877-2 (40 min).

Performance: *Good clean fun*
Recording: *Excellent*

Loud, fast rock-and-roll is a young man's game, but it doesn't hurt to have a knowledgeable adult or two manning the control board when the stuff is being recorded. Two teams of producers, in-

cluding Tom Werman (Cheap Trick, Mötley Crüe), helped to focus Kix's blitzkrieg into a gloriously full sound, with ample studio pizzazz to counterpoint the frenzy. "Blow My Fuse" combines the shark-attack power of AC/DC, the muscular riffing of Aerosmith, and the bottomless whomp of Led Zeppelin. Yet it stands on its own as a model of hard rock in the Eighties.

The lyrics are standard-issue tracts on sex and rock-and-roll, cleverly disguised in *Piece of the Pie* and *Get It While It's Hot* so you're not sure whether they're singing about one or the other or both. *Don't Close Your Eyes*, a brief serious interlude, is the sort of song that might convince a discouraged teenager not to commit suicide. The biggest kicks, though, are when the guitarists lock in with the rhythm section and singer Steve Whiteman rasps about going for broke. The closer, *Dirty Boys*, is taken at such a frantic clip you'll be holding on for dear life—and loving every minute of it. P.P.

CLEO LAINE: *Cleo Sings Sondheim*. Cleo Laine (vocals); orchestra, Jonathan Tunick cond. *I Remember*; *Not While I'm Around*; *Send In the Clowns*; *Not a Day Goes By*; *I'm Still Here*; *You Could Drive a Person Crazy*; and ten

others. RCA 7702-1-RC, © 7702-4-RC, © 7702-2-RC (60 min).

Performance: *A knockout*
Recording: *Bright and alive*

A lot of fine singers have been recording Stephen Sondheim albums lately, but none has done one better than this. I say that having faulted some of Cleo Laine's other albums for having too many idiosyncratic mannerisms, little touches put in for the sake of sounding "different." And if there's anything that will destroy a Sondheim song, it's not sticking to his lyrics and his music *as written*. But this time Laine sings all sixteen songs as straight as she's ever sung anything, but with passion, bite, compelling dramatic insights, and (where appropriate) a wonderful sense of fun.

I doubt if anyone else has ever sung *Not While I'm Around* from *Sweeney Todd* with more directly communicative sincerity. The same goes for the much-abused *Send In the Clowns*. And has anyone ever done the line "Does anyone still wear a hat?" (from *Company's The Ladies Who Lunch*) as wryly as Laine does it here? Jonathan Tunick's fine arrangements range from the quietly subtle to the blazingly swinging, all just right to help her get to the heart of each song. R.H.

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THEY MIGHT BE GIANTS



JOHNN LANNEL and John Flansburgh, who work under the name They Might Be Giants (derived from an obscure George C. Scott movie), have been the darlings of college radio for a while now. Their previous album, which has sold 100,000 copies so far, is often referred to, with some justification, as the "Dark Side of the Moon" of the independent record charts. So it's with a certain embarrassment that I confess I never really paid much attention to them until very recently. It was obviously my loss, because repeated listening to their new album, "Lincoln," reveals a clever, quirky, often brilliantly arranged and produced piece of postmodern art (yes, *art*) that just might be the "Pet Sounds" of the Eighties.

Which is not to say, of course, that "Lincoln" actually recalls the Beach Boys, although given its eccentric, frequently keyboard-driven textures—emanating from accordions, prepared pianos, cheesy electronic organs, and what sounds like harpsichords combined with harmonicas, autoharps, and God knows what else—I suspect that certain Brian Wilson productions probably lurk in these musicians' record collections. One of the intriguing things about "Lincoln" is its fascination with sheer sound, with the juxtaposition of aural elements that you wouldn't expect to go together.

That's a Sixties idea, of course, as old as Stockhausen or the Beatles' "Revolver," but "Lincoln" is hardly the work of hippie wanna-be's. As a matter of fact, the music is determinedly unconventional, a bizarre collage of TV sitcom themes, Beatlesque melodies, demented jazz riffs, Buddy Holly tunes, old-time cartoon soundtracks, and about a zillion other things I haven't yet identified. There are moments here

when They Might Be Giants walks a fine line between period evocation and parody.

But there's actually a distinctive contemporary sensibility at work here, too, especially when you listen to the lyrics. These guys are wicked punsters, not above a certain calculated semblance of childlike naïveté, and occasionally their word play is dazzling simply for the sake of being dazzling. But more often than not, they're on to something important, even profound. Exhibit A in that regard is *Purple Toupee*, which, over an addictive, only slightly skewed pop-rock musical track, sums up an entire generation's ignorance of and disaffection from its predecessors, in the process saying more about contemporary angst in one song than is said in the entire Tracy Chapman album (and saying it a lot funnier, I might add).

There's more to this album—a lot more, actually. It's an embarrassment of riches, to the extent that the weaker tracks (where the whimsy level gets out of hand briefly) wind up looking worse than they might in another context. But no matter. This is definitely the best album ever made by guys who used to wear enormous fezzes onstage, and you should hear it right away. *Steve Simels*

THEY MIGHT BE GIANTS: *Lincoln*. John Linnell, John Flansburgh (vocals and instrumentals); other musicians. *Ana Ng; Cowtown; Lie Still, Little Bottle; Purple Toupee; Cage & Aquarium; Where Your Eyes Don't Go; Piece of Dirt; Mr. Me; Pencil Rain; The World's Address; I've Got a Match; Santa's Beard; You'll Miss Me; They'll Need a Crane; Shoehorn with Teeth; Stand on Your Own Head; Snowball in Hell; Kiss Me, Son of God.* BAR NONE/RESTLESS 72600-1, © 72600-4, © 72600-2 (39 min).

PET SHOP BOYS: *Introspective*. Pet Shop Boys (vocals and instrumentals); vocal and instrumental accompaniment. *Left to My Own Devices; I Want a Dog; Domino Dancing; I'm Not Scared; Always on My Mind/In My House; It's Alright.* EMI MANHATTAN E1-90868, © E4-90868, © E2-90868 (48 min).

Performance: *Ear candy*
Recording: *Good*

Boredom and despair set to a disco beat—that is the essence of the Pet Shop Boys, a London duo with a growing streak of hits. Most of the instrumentals in "Introspective" are synthetic, and at times you wonder about the singing as well. In contrast to American dance music, where vocals are often wrenchingly overwrought, the Pet Shop Boys sound as if they're about to fall asleep. After nine minutes of *Always on My Mind*, a Willie Nelson hit turned into a pop-disco taffy pull, you might be too.

Crafted more for the dance club than the living room, "Introspective" contains only six songs, all of which clock in at more than six minutes. Sooner or later a payoff comes in the form of a catchy chorus, the hook of which is often as simple and repetitive as the "all day, all day" chant in *Domino Dancing*. Though the words are frequently downcast—in the case of *I Want a Dog*, they're downright plaintive—the music bounces along at an indifferent, cheerful, mechanical clip. The Pet Shop Boys make danceable pop that is not without charm, but between the lines their real gift is for intimating the void in the life of the modern urban "party animal." Let's dance—or shall we cry? *P.P.*

PINK FLOYD: *Delicate Sound of Thunder*. Pink Floyd (vocals and instrumentals); vocal and instrumental accompaniment. *Learning to Fly; The Dogs of War; On the Turning Away; Money; Another Brick in the Wall*, and nine others (ten others on cassette and CD). COLUMBIA PC2 44484 two LP's, © P2T 44484 two cassettes, © C2K 44484 two CD's (104 min).

Performance: *Labored*
Recording: *Not great*

"Delicate Sound of Thunder" is the sort of record that makes you think disgruntled former member Roger Waters had a point when he complained about the Pink Floyd "reunion": A live album recorded in an echo chamber of an arena, with the audience hooting and whistling audibly. Two discs or tapes but no new material. A hefty price tag. No visuals, which are a major component of a Pink Floyd concert. Why would anyone who has the superior studio versions need this?

The most objectionable aspect of "Delicate Sound of Thunder" is that the first half is a virtual rehash of the group's year-old comeback album, "A Momentary Lapse of Reason." It is the second part of the show, a runthrough

of Pink Floyd's greatest hits, for which fans will likely pay twice the price of admission. They're all here—*Money* and three others from "Dark Side of the Moon," a couple of biggies from "The Wall," and so forth—and they're performed adequately by David Gilmour, Nick Mason, Richard Wright, and eight auxiliary musicians and singers, though a lot of the show's theatricality is lost in translation from the stage to the album. That line they sing about money ("It's a drag") sounds kind of hypocritical when you consider how much they'll be making from this recycled, redundant dud of a set. *P.P.*

PRETTY POISON: *Catch Me I'm Falling*. Pretty Poison (vocals and instrumentals); vocal and instrumental accompaniment. *Hold Me; Nighttime; Let Freedom Ring; Catch Me I'm Falling; Don't Cry Baby; Shine*; and four others. VIRGIN 90885-1, © 90885-4, © 90885-2 (50 min).

Performance: *Steady*
Recording: *Okay*

Pretty Poison has done its homework. The band members have obviously hit the dance clubs and clung to the radio. Why else would this record sound so familiar? To its credit, the band has tried some mild variations on the current vogue in dance music, and singer Jade Starling belts like a trouper in a few songs. The lyrics, however, are mostly strings of clichés and the grooves a little too complacent. Dancers may like what they hear, but more stationary folks needn't bother. *R.G.*

MICHELLE SHOCKED: *Short, Sharp, Shocked* (see Best of the Month, page 104)

BARBRA STREISAND: *Till I Loved You*. Barbra Streisand (vocals); vocal and instrumental accompaniment. *Till I Loved You; The Places You Find Love; All I Ask of You; Love Light*; and seven others. COLUMBIA OC 40880, © OCT 40880, © CK 40880 (47 min).

Performance: *Warm and tender*
Recording: *Lush and lovely*

With her first studio-recorded album in three years, the ever-surprising Barbra Streisand takes a noble stab at restoring romance to pop music—and makes it work. This is hardly the first time that ten or more songs have been tied together by a romantic story line. What counts is that most of the songs, which trace the rise and fall and possible rekindling of a relationship, are worthy ones, most written especially for Streisand by the likes of Burt Bacharach, Carole Bayer Sager, Michel Legrand, and Alan and Marilyn Bergman. And, best of all, Streisand sings them with the distinctive warmth, intensity, and intelligence that have kept her on top for nearly three decades.

One track, of course, has already

made it to the charts: the title song, an appealing duet with TV actor Don Johnson. But the real gems are Andrew Lloyd Webber's *All I Ask of You*, from Broadway's *The Phantom of the Opera*, and Streisand's own (with the Bergmans) *Two People*, from the film *Nuts*, both of which call on her to make the kind of soaring vocal leaps that few other pop singers can negotiate so deftly.

The arrangements, mostly by Bacharach, Quincy Jones, and Phil Ramone, combine acoustic and electronic instru-

ments in stress-free ways that never steal the spotlight from the star. And get a load of the *back-up* vocalists for the opening track: Dionne Warwick, Jennifer Holliday, Siedah Garrett, and Luther Vandross, to name just four of them! *R.H.*

LUTHER VANDROSS: *Any Love*. Luther Vandross (vocals); vocal and instrumental accompaniment. *I Wonder; She Won't Talk to Me; I Know You Want To; Come Back; Any Love*; and



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four others. EPIC OE 44308, © OET 44308, © EK 44308 (48 min).

Performance: *Silken*
Recording: *Very good*

Luther Vandross might not be one of the most gifted lyricists or composers around, but he *is* one of the best vocalists. His silken, polished style lifts his songs to a level they would not otherwise achieve. He is also an accomplished producer, insuring consistent quality in his albums, which are aimed at an audience that favors moderately paced dance music, the sort that never gets out of hand.

Vandross is at his best in "Any Love." The songs seem catchier and more imaginatively shaped than earlier efforts, especially *She Won't Talk to Me*. As usual, though, he reaches his peak with one unabashedly schmaltzy love song, this time *Love Won't Let Me Wait* (the only song here he didn't have a hand in writing). It shows what romantic balladry is all about. Sweet, soulful singing doesn't get any better than this. *P.G.*

KEITH WHITLEY: *Don't Close Your Eyes*. Keith Whitley (vocals); vocal and instrumental accompaniment. *Flying Colors; It's All Coming Back to Me Now; Don't Close Your Eyes; I'm No Stranger to the Rain; Honky-Tonk Heart;* and four others (seven others on CD). RCA 6494-1-R, © 6494-4-R, © 6494-2-R (33 min).

Performance: *Doing it right*
Recording: *Very good*

Kentuckian Keith Whitley, who originally came out of the bluegrass tradition—serving as vocalist for both Ralph Stanley and the Clinch Mountain Boys and for J. D. Crowe and the New South—has lately emerged as one of the most promising of country music's neo-honky-tonkers. In "Don't Close Your Eyes" the singer weds his attractive, plunging baritone to a nasal mountain twang. George Jones vocal inflections, and a passel of good material, the bulk of it drawn from Nashville's most reliable contemporary tunesmiths. Whitley is best in Lefty Frizzell's *I Never Go Around Mirrors*, where he pulls out a convincing hillbilly whine, and in *Flying Colors*, an exuberant, tongue-in-cheek saga of survival in love that's reminiscent of the best of John Anderson's early material.

Whitley and his co-producer, Garth Fundis, who is known primarily for his work with Don Williams, leave most of the songs suitably bony but dress the others with panache, employing a fat ol' pedal steel when necessary and calling on a raucous piano and cynical dobro to round things out. All in all, "Don't Close Your Eyes" is a winner from start to finish. *A.N.*

LUCINDA WILLIAMS (see **Best of the Month, page 103**)

JAZZ

JAMES P. JOHNSON: *Carolina Shout*. James P. Johnson (piano). *Eccentricity; Baltimore Buzz; Carolina Shout; Charleston; Ole Miss Blues; Harlem Strut; Gypsy Blues;* and seven others. BIOGRAPH © BCD 105 (46 min).

Performance: *Cascading*
Recording: *Excellent*

James P. Johnson was Bessie Smith's favorite piano accompanist, the composer of such classic keyboard compositions as *Carolina Shout, Old Fashioned Love,* and *Charleston*, and an inspiration to virtually every piano player of his day, including the very young Duke Ellington. Moreover, Johnson was the first black artist to cut piano rolls of his own compositions. Starting in 1916, before the first jazz phonograph recording was made, Johnson cut one or two rolls a month for the Aeolian company, some of which have been assembled by the Biograph label for "Carolina Shout," a compact disc that brings out the best in these performances. Pumping player pianos is an art that requires knowledge of the music and, above all, a good ear, and we're fortunate that when Biograph began issuing piano-roll performances on LP several years ago, experts were consulted and employed to get it right. On this CD not only is the tempo correct, but the digital recording does full justice to the piano sound. To be sure, a piano roll will always have a certain mechanical air about it, but that is part of its charm. *C.A.*

LEE RITENOUR: *Festival*. Lee Ritenour (guitar, guitar synthesizer); Dave Grusin (keyboards); Bob James (keyboards); Omar Hakim (drums); Marcus Miller (bass); other musicians. *Night Rhythms; Latin Lovers; Humana; Rio Sol;* and four others. GRP GR-9570, © GRC-9570, © GRD-9570 (41 min).

Performance: *One of his best*
Recording: *Excellent*

While guitarist-composer Lee Ritenour tends to follow a commercially palatable path, he has ventured from it at times to come up with albums that indicate the presence of an inquisitive musical intelligence. "Festival" is one of those special occasions. He has teamed top studio musicians from New York and Los Angeles with Brazilian artists like João Bosco, Caetano Veloso, and Paulinho DaCosta to produce a record that throbs with a Latin pulse while reflecting the North American penchant for polished production. The music is melodically and rhythmically satisfying, and Ritenour's ever-impeccable technique applied to this superior material makes for one of his best recorded efforts. He hasn't done a Brazilian album in ten years, so perhaps that's

why he sounds so fresh here. Each selection is a delight, but my favorite is *Latin Lovers*, which most thoroughly reflects the festive feeling of the album's title. This is a musical travelogue bound to lift late-winter spirits. *P.G.*

GEORGE SHEARING AND ERNESTINE ANDERSON: *A Perfect Match.* Ernestine Anderson (vocals); George Shearing (piano); Neil Swainson (bass); Jeff Hamilton (drums). *On the Sunny Side of the Street; Body and Soul; I Won't Dance; Some Other Time; The Second Time Around; That's for Me; I Remember Clifford;* and five others (seven others on CD). CONCORD JAZZ CJ-357, © CJ-357-C, © CCD-357 (53 min).

Performance: *Harmonious*
Recording: *Fine*

That singer Ernestine Anderson and pianist George Shearing are kindred spirits became evident when they performed together at the 1987 Fujitsu-Concord Jazz Festival in Japan. Two cuts on the Concord Jazz album "Dexterity" captured their teamwork so well that more was called for. "A Perfect Match" features twelve Anderson/Shearing collaborations and two instrumentals by the trio in a wonderful, breezy set that brings out the best in everyone concerned. With the possible exception of *Trust in Me*, a rarely performed 1934 song, the program consists of familiar material, all of which is given a delightfully personal touch. Anderson sang with Lionel Hampton's band in the early Fifties and became popular in Sweden before she achieved recognition in America. The years have treated her voice well, for she sounds better today than ever before. *C.A.*

CEDAR WALTON: *Cedar Walton Plays.* Cedar Walton (piano); Ron Carter (bass); Billy Higgins (drums); other musicians. *Willow Weep for Me; Hallucinations; He's a Real Gone Guy; Book's Bossa;* and four others. DELOS © D/CD 4008 (62 min).

Performance: *Excellent*
Recording: *Very good*

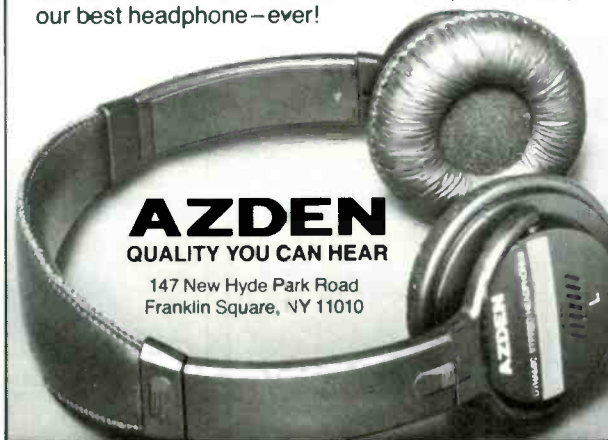
An alumnus of the Art Farmer/Benny Golson Jazztet and Art Blakey's Jazz Messengers, pianist Cedar Walton made his recording debut as a leader in 1968, on Prestige. Now he makes his debut as a leader on CD with this Denon release, playing with characteristic style and taste. Rhythmic support is provided by bassist Ron Carter and drummer Billy Higgins, and there's some fine "embroidery" by five horns, including trombonist Steve Turre and baritone saxophonist Charles Davis. Davis, a player who has never received the recognition he deserves, contributes the most satisfying horn solos, especially in Bud Powell's *Hallucinations*. But this whole set of loose, bluesy, boppish jazz is thoroughly enjoyable. *C.A.*

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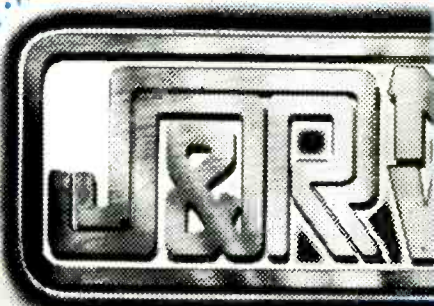
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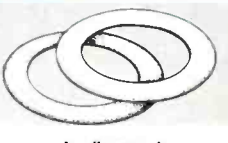
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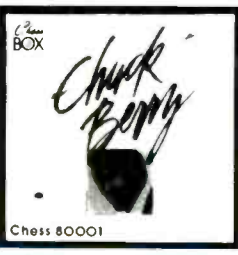
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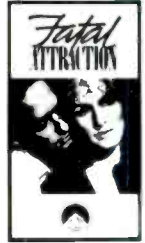
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GARY BURTON: GOOD VIBES



VIBRAPHONIST Gary Burton's musical career has been an exploration of the possibilities of thoughtful jazz. He's chosen projects that have challenged and broadened his musical sensibilities—and ours. Working for the most part in a quartet, he has varied the other solo voices in his group from guitar to piano to trumpet, and he's investigated a complex array of composers, recording the high-minded work of Carla Bley as well as collaborating with the irrepressible Chick Corea. Without sacrificing the energy or the poetry of his playing, Burton has made music like an insatiable scholar.

For all its freshness and beauty, his new record, "Times Like These," is a sort of recapitulation. The presence of guitarist John Scofield as the other primary soloist reinforces that impression. The album marks a double return: Not only was Scofield a regular member of the Burton quartet in the Seventies, but this is the first time in several years that Burton has worked extensively with a guitarist. The reunion of the two musicians works very well. Scofield's astringency cuts Burton's mild sweetness, and their continuous interweaving of solos and background fills makes for a rich jazz tapestry.

Burton gets impeccable support from his rhythm section, bassist Marc Johnson and drummer Peter Erskine. They

set the pace simply and unobtrusively, adding slight but exquisite flourishes—Johnson with slurred or bent notes, Erskine with tiny snare bursts that, in the context of Burton's understated approach, give the music snap. Michael Brecker brings the muscular tone of his tenor saxophone to bear for solos on two tracks.

For the most part the music in "Times Like These" is restrained and unfolds carefully, as do many of Burton's solos. In the title cut he takes a relaxed turn, in *Why'd You Do It?* he glides through arpeggios while tossing in a few bluesy accents, and in *Was It So Long Ago?* he plays with measured but assertive plunks. But *P.M.*, a Chick Corea tune, gets zesty as the quartet shifts back and forth between breezy and blazing tempos, and *Bento Box* swings gloriously—tight and light and with the flavor of a tango. Gary Burton is a smart man, and he's made a smart record, but he can burn a little, too, when he wants to.

Ron Givens

GARY BURTON: *Times Like These.* Gary Burton (vibraphone); John Scofield (guitar); Marc Johnson (bass); Peter Erskine (drums); Michael Brecker (saxophone). *Times Like These; Or Else; Robert Frost; Why'd You Do It?; P.M.; Was It So Long Ago?; Bento Box; Do Tell* (CD only). GRP GR-9569, © GRC-9569, © GRD-9569 (51 min).

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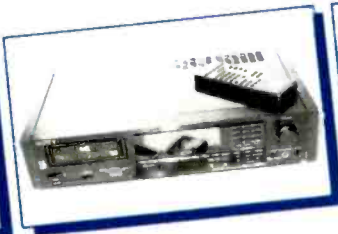
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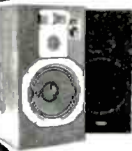


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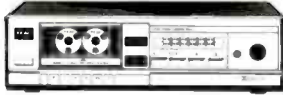


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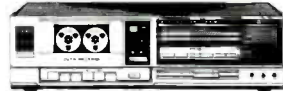


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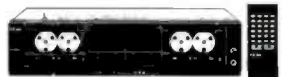
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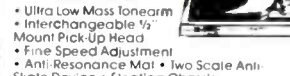
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BARTÓK: *Concerto for Orchestra; Music for Strings, Percussion, and Celesta.* Montreal Symphony Orchestra, Charles Dutoit cond. LONDON © 421 443-4, © 421 443-2 (69 min).

Performance: *Brilliant*
Recording: *Superb*

It isn't often that you find the entire personnel list of a large orchestra printed with the annotation for a recording. I would assume it was done in this instance as Charles Dutoit's way of sharing with his players the admiration he has received for their by now numerous recordings together—or, put another way, his way of sharing with the public the esteem he feels for the players. In any event, this is certainly an appropriate record for such a gesture. The virtuosic qualities of the *Concerto for Orchestra* are exploited smoothly, fluently, and altogether brilliantly, with utter security in every choir and the richest strutting of colors, and every phrase is charged with conviction.

Some of the substance below the surface may be missing, some of the little subtleties that perhaps only a Hungarian who knew Bartók could give us, that come across so directly and effortlessly in the classic Reiner/Chicago recording. But then that version is simply beyond comparison. Among more contemporary readings, Dutoit's is quite a distinguished one. His orchestra more than holds its own against the strongest competition, and the performance is enhanced more than a little by the absolutely superb sound, which suggests a new breakthrough by a company already responsible for so many milestones in the art of recording the modern orchestra.

Dutoit has some refreshing ideas in the *Music for Strings, Percussion, and Celesta*. Instead of the darkish, somewhat mystical approach generally favored, his is relatively bright-eyed, as if placing the work in a buoyant pastoral context. This approach need not negate or displace the more traditional one, but it works, and it serves as a healthy

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A NEW "ARIADNE"



Jessye Norman: nothing short of thrilling

IT seems incredible that twenty years ago *Ariadne auf Naxos* was a novelty even to opera cognoscenti. Today Richard Strauss's sixth opera is not only popular and often performed, but it is also not infrequently recorded. Despite its widespread acceptance, however, *Ariadne* is still a very special piece, balancing on the fine line between the dramatically serious and the farcical, between the musically noble and the (intentionally) trifling.

Kurt Masur's new, admirably recorded version of the opera on Philips laudably captures its spirit and offers some fine interpretations, chief among them that of Masur himself. This very musicianly conductor draws from the excellent Leipzig Gewandhaus Orchestra the many subtleties of the delicate yet impassioned score.

Surely the title role has never been sung with greater amplitude of tone than it is here by Jessye Norman. Although she does not fully realize the comedy of the Prima Donna's brief appearances in the Prologue, she is nothing short of thrilling in her two arias and in the duet with Bacchus. Julia Varady's Composer is expressively sung; she is best in the *Apostrophe to Music*, less effective in the angry passages, where she tends toward stridency. Edita Gruberova copes easily with all but the final high note in *Zerbinetta*'s cruelly difficult showpiece, and her characterization of the "unfaithful" comedienne is nicely drawn throughout.

Canadian tenor Paul Frey brings a finer than usual lyric quality to his portrayal of Bacchus. His wooing of the

deserted princess is as tender as it is aggressive, which gives effective variety to his performance. Dietrich Fischer-Dieskau makes a warm and fatherly figure of the Music Master in an unusually sympathetic performance. As the Major-Domo, Rudolf Asmus is properly starched and pompous, although he misses comic opportunities that I feel the librettist, Hugo von Hoffmanstahl, intended. The four comedians, led by Olaf Bär, are very good indeed.

Among the three recordings of Strauss's *Ariadne* on compact disc—the other two being Angel's 1954 recording conducted by Herbert von Karajan and the recent Deutsche Grammophon one conducted by James Levine (the London recording by Georg Solti has not been transferred from LP)—a choice would not be easy. What especially delights me is simply that there are several versions to choose from, each validating the work's status as a masterpiece in the operatic repertoire. The newest one, which is additionally distinguished by excellent sound, is unusually satisfying. *Robert Ackart*

R. STRAUSS: *Ariadne auf Naxos.* Jessye Norman (soprano), Prima Donna, *Ariadne*; Julia Varady (soprano), *Composer*; Edita Gruberova (soprano), *Zerbinetta*; Paul Frey (tenor), *Tenor, Bacchus*; Dietrich Fischer-Dieskau (baritone), *Music Master*; Olaf Bär (baritone), *Harlequin*; Rudolf Asmus (spoken voice), *Major-Domo*; others. Leipzig Gewandhaus Orchestra, Kurt Masur cond. PHILIPS © 422 084-2 two CD's (118 min).

reminder that such masterworks not only invite a variety of interpretations but thrive under them. R.F.

BEETHOVEN: Piano Sonata No. 32, in C Minor, Op. 111; Piano Sonata No. 5, in C Minor, Op. 10, No. 1. Claudio Arrau (piano). PHILIPS © 420 154-4, © 420 154-2 (48 min).

Performance: *Superb*
Recording: *Excellent*

Claudio Arrau apparently regards the Beethoven sonata recordings he has been making for Philips in his eighties (his third such cycle in about thirty years) as a sort of testament, but very clearly not as an occasion for self-congratulation. He may remark on the spiritual essence in Op. 111, but he has never undertaken to play up such a notion with the sort of self-conscious solemnizing into which a lesser musician might be tempted. Indeed, such minor mannerisms as may be noted in this new recording—such as the little hesitations in the launching of the second part of the first movement and in the arietta that follows—seem less of a contrived interpretive aggrandizement than a sort of spontaneous response to a fresh discovery of some wondrous detail of Beethoven's inspiration. In a sense, the entire performance gives off that feeling of fresh discovery and spontaneity, and at the same time an impression of immense assurance and authority. It's something like (I imagine) climbing Everest with a confident, experienced guide who knows better than to compare his own importance with the exaltation of reaching the peak.

Arrau's realization of the Sonata No. 32 is an exalting one—not the measurable "best," perhaps (that being a quite unrealistic notion), but one whose great beauty and unostentatious intellectual power simply cannot be resisted. The earlier sonata in the same key takes on a certain breadth and depth in Arrau's reading without at any point being inflated beyond its true proportions. The piano is recorded throughout with exceptional vividness and in virtually ideal perspective, effectively projecting both the strength and the subtlety of Arrau's playing. R.F.

F. COUPERIN: Preludes from "L'Art de toucher le clavecin"; Pièces de clavecin, Book III (excerpts). L. COUPERIN: *Suite in D Minor*. A.-L. COUPERIN: *Three Pièces de clavecin*. Gustav Leonhardt (harpsichord). PHILIPS © 420 939-4, © 420 939-2 (62 min).

Performance: *Genial*
Recording: *Excellent*

François Couperin was dubbed "Couperin le grand" ("the great Couperin") not simply in recognition of his genius but also to differentiate him from the other fine composers who bore his surname, his uncle Louis and his second cousin Armand-Louis among them. In-

cluded here in the musical context of his relatives, François seems grander than ever.

While the Suite in D Minor by Louis and the three modest works here by Armand-Louis are reasonably engaging, one immediately senses a much bigger personality taking command of the harpsichord, and of harpsichordist Gustav Leonhardt, at the opening of François's eight preludes from his 1716 pedagogical work *L'Art de toucher le clavecin*. Compared with some of his other music, which can be extravagantly descriptive, these preludes are a bit subdued, though no less inventive. They're marvelous works—often as short, fragmentary, and striking as Chopin's preludes a century later.

The selections from François's third book of harpsichord pieces show the composer back in more picturesque form, and while Leonhardt isn't aloof from some of the more burlesque elements, he always incorporates them into the overall work in an organic, musical fashion. As a result, the humor never seems as obscure and dated as it usually does in less capable hands. Leonhardt's performances aren't as sensuous as one might imagine, but they're full of conviction, and there's a leisurely air about them that—combined with the crisp, inviting sound of his harpsichord, a modern German instrument

based on a late-seventeenth-century French model—will make you want to return to this recording again and again. D.P.S.

GLASS: Dance, Nos. 1-5. Philip Glass Ensemble, Michael Riesman cond. CBS © M2T 44765 two cassettes, © M2K 44765 two CD's (105 min).

Performance: *Effective*
Recording: *Ditto*

Philip Glass seems to me to compose his best music when he is working with his own ensemble in a collaboration with other artists. His film scores are examples, as is his recent theater piece, *1000 Airplanes on the Roof*, done with playwright David Henry Hwang and visual artist Jerome Serlin. Glass also has a long history of working with choreographers. *Dance*, a three-way collaboration with choreographer Lucinda Childs and artist Sol LeWitt, was first performed in 1979 in Amsterdam and at the Brooklyn Academy of Music. The music for Nos. 1 and 3 was recorded at that time; the two organ solos, Nos. 2 and 4 (played here by Michael Riesman and the composer himself), and the quirky No. 5 were recorded in 1984 and 1985. Whereas Nos. 1 and 3 are in a familiar and lively idiom, the organ solos are more reflective, and the finale (Continued on page 124)

Claudio Arrau: Beethoven with strength and subtlety



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is quite diverse and striking. The whole makes a suite of considerable variety and charm. The performances and the recording itself are highly effective, with the exception of the very opening of No. 1, which has a switched-on, cut-in effect that, intentional or not, I find distracting. The idea of starting *in medias res* is logical, but it sounds like a tape splice or a switch someone threw a split second too late. *E.S.*

LISZT: Piano Concertos Nos. 1 and 2; Totentanz (see Best of the Month, page 105)

MAHLER: Symphony No. 2, in C Minor ("Resurrection"). Benita Valente (soprano); Maureen Forrester (contralto); Ardwyn Singers; BBC Welsh Singers; Cardiff Polyphonic Choir; Dyfed Choir; London Symphony Chorus and Orchestra, Gilbert Kaplan cond. MCA CLASSICS © MCAD 2-11011 two CD's (83 min).

Performance: *Has its points*
Recording: *Needs more ambience*

A well-heeled publisher takes it into his head to fulfill a near-obsessive aspiration to learn, conduct, and record just one major score, Mahler's *Resurrection* Symphony—the idea invites mockery. But would-be Maestro Gilbert Kaplan was in dead earnest, and he made it his business to unearth every iota of information concerning the genesis of Mahler's epic work as well as Mahler's own performance practices and those of his disciples. He carried off a successful performance at Lincoln Center in 1982 and did a repeat the following year at Carnegie Hall. International engagements followed, including one at the 1986 Cardiff Festival in Wales, which led to this recording. Whatever the shortcomings of the performance, the set includes 128 pages of interesting annotation, half of it Mahler's own correspondence, that will tell you everything you ever wanted to know about the *Resurrection* Symphony (and perhaps more). Moreover, every distinct section has its own track on the CD's for easy reference.

Kaplan scores highest, musically, in the three inner movements. The *Andante moderato* is nicely paced and beautifully nuanced, with just the right amount of subtle Mahlerian portamento; the "quietly flowing motion" specified for the scherzo is flawlessly achieved; Maureen Forrester, an old hand at this music, gives us a lovely *Urlicht*, and the London Symphony brasses perform with gorgeous tone and balance in the chorale episode.

Not altogether surprisingly, Kaplan is no match for veteran Mahler interpreters in the stormy orchestral sections of the outer movements. Nothing is *wrong* with his reading; he simply does not induce the electrifying response from the players that this music needs. (This is not to say that the London Symphony



Benita Valente: special Mahler

musicians are not thoroughly alert throughout, even though by now they can probably play the notes in their sleep.) Kaplan does shine, along with the production team, in the famous "grosse Appell" passage with its offstage band and horn and trumpet calls, as well as in the final choral apotheosis, which makes use of a tracked-in organ from Yale University's Woolsey Hall and the bells of the same university's Harkness Tower. Soprano Benita Valente is, as usual, a consummate artist in both her solo part and her duet with Forrester in the finale.

The recording itself is not without its problems. Most of them stem, I suspect, from the use of a hall somewhat undersized for achieving the illusion of depth so essential in the first and last movements. The lateral imaging is fine, as are the offstage elements, but the orchestral climaxes are a bit flat in acoustic perspective. Oddly enough, the sound opens up a bit in the final pages, when the remote recordings of the organ and bells are added to the mix.

All in all, while this recording will certainly not displace the many excellent versions of the Mahler Second by professional conductors now available on CD, as a study version it is a rather special production. *D.H.*

NIELSEN: Symphony No. 3, Op. 27 ("Sinfonia espansiva"); Maskerade Overture. Susan Burghardt (soprano); Ralph Bassett (baritone); Danish National Orchestra, Sixten Ehrling cond. AUDIOFON © CD72025 (41 min.)

Performance: *Sane and solid*
Recording: *Fine live job*

From the Miami-based Audiofon label, which has heretofore confined its releases to keyboard and chamber works, comes this live recording from a Kennedy Center concert on May 19, 1984. Sixten Ehrling's reading of the Nielsen Third is solid, sober, and spacious (as befits its subtitle), and much care has

JACK MITCHELL/CAMI

been taken with fine points of dynamic shading. The slow movement's offstage wordless voices are ideally placed, but, unhappily, the music's tricky intonation problems prove a bit much, especially for the soprano. The pacing is excellent, however, in the puckish, bittersweet third movement and the often-miscalculated finale. By way of encore we get the sparkling overture to Nielsen's comic opera, *Maskerade*. The sonics throughout are very realistically those of a live concert (there was no editing of the master tape), including some perceptible but relatively unobtrusive audience noise. There is also some applause, but it is faded to a merciful minimum. *D.H.*

PROKOFIEV: Sinfonia Concertante in E Minor for Cello and Orchestra, Op. 125. SHOSTAKOVICH: Cello Concerto No. 1, in E-flat Major, Op. 107. Mstislav Rostropovich (cello); London Symphony Orchestra, Seiji Ozawa cond. ERATO © MCE 75485, © ECD 75485 (63 min.)

Performance: *Masterly*
Recording: *Very good*

Both of these works were written for the cello soloist, Mstislav Rostropovich. The Shostakovich dates from 1959 and has had a good number of recordings since its dedicatee made the first one, with Eugene Ormandy and the Philadelphia Orchestra, in 1960. Prokofiev's Sinfonia Concertante is a revision the composer made for Rostropovich in 1950-1951 of his Cello Concerto, Op. 58, completed in 1938. It has been performed only sporadically, and it is good to have it here, particularly since both recordings have the clean, crisp sound of London's Henry Wood Hall instead of the rather blowsy acoustic that marred Rostropovich's recent Paris recordings for Erato, as conductor, of the seven Prokofiev symphonies.

Surprisingly, both performances are marginally tauter than the earlier Rostropovich versions. The artist is his usual masterly and agile self in the essentially lighthearted Shostakovich piece, and, as before, the five-minute cadenza that follows the wistful slow movement is stunningly virtuosic. As always, the very end of the work presents a problem in clear articulation. Not even Seiji Ozawa's brisk, precise leadership overcomes the slight timpani overbalance, which obscures the rhythmic impact and thereby diminishes the sense of finality.

The Prokofiev is quite a different work in spirit from the original Cello Concerto, which bears traces of the Parisian *stile mécanique* cultivated in the Twenties and Thirties. The thematic material from the earlier work is imbued with a more lyrical spirit in the outer movements, and the central movement, largely new in substance and highly virtuosic, is a curious mix of the dissonance of Prokofiev's earlier

scores and the more accessible manner of his late ballets. Rostropovich and Ozawa are admirable collaborators throughout. *D.H.*

SCRIABIN: Piano Sonatas Nos. 3, 4, 5, and 10. Robert Taub (piano). HARMONIA MUNDI © HMU 907011 (53 min.)

Performance: *Excellent*
Recording: *Excellent*

The few recordings Robert Taub has made to date, ranging from Beethoven and Schumann to the complete piano music of Milton Babbitt, have shown him to be an uncommonly thoughtful and persuasive musician, the sort who can think his own thoughts without turning everything upside down for the sake of novelty, who can bring fresh insights to familiar works and make those from outside the alleged mainstream more than accessible. He is certainly attuned to the Scriabin mystique, but he does not allow himself to be swept away by it. One of the intriguing things about his performances of the sonatas on this CD is the way he seems to be reminding us that Scriabin, an outstanding pianist himself, was after all well acquainted with the works of Schumann, Liszt, and Beethoven and that digesting them was part of the process that led to his own unarguably revolutionary contributions as a composer.

If this disc is to be the first in an eventual survey of all the Scriabin sonatas, it is an especially good beginning, for Nos. 3, 4, and 5 constitute a kind of concise documentation of the "revolution"—Scriabin's break with the past, assertion of his individuality (in the most ingratiating terms in No. 4), and confident setting-forth on a new path. Sonata No. 10, on the other hand, is in a sense a summing-up, a report from the new world of his own creation. Taub does not have to strive to underscore these factors; he really seems to be letting the music speak for itself, and that can be the strongest sort of advocacy when it works as well as it does here. Interpretively, Taub more than holds his own with the others who have made modern recordings of these works—Horowitz, Richter, Gould, and Ashkenazy—and the Harmonia Mundi CD has about as vivid a reproduction of real piano sound as we are likely to hear in any format. *R.F.*

SIBELIUS: Symphony No. 5, in E-flat Major, Op. 82; En Saga, Op. 9; Tapiola, Op. 112. Finnish Radio Symphony Orchestra, Jukka-Pekka Saraste cond. RCA © 7822-4-RC, © 7822-2-RC (67 min.)

Performance: *Highly atmospheric*
Recording: *Good*

In this second installment of what promises to be a comprehensive survey of the Sibelius orchestral works, Jukka-Pekka Saraste conducts a Fifth Symphony that is notable for its emphasis

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HORSZOWSKI



IT hardly needs saying that Mieczyslaw Horowitz is one of the wonders of the musical world. Born in 1892, he has been performing for nearly nine decades, and, as a member of the faculty of the Curtis Institute of Music in Philadelphia for roughly half that time, he has taught several of today's most distinguished pianists. In June 1987 he celebrated his ninety-fifth birthday with a recital in London as part of a European tour, and he is still touring.

During his long career, however, Horowitz has made few solo recordings, and Nonesuch recently moved to correct that situation while he is still in what might be called his extended prime. The label's initial release, a year or two ago, included one of his favorite recital pieces, Debussy's *Children's Corner*, along with a Beethoven sonata, a Mozart fantasy, and works of Chopin. A new collection taped at Curtis last May, a month before his ninety-sixth birthday, again includes a suite composed for children, Schumann's *Kinderszenen*, together with the same composer's *Arabeske* and more Mozart (the last of the sonatas, K. 576, and another Horowitz favorite, K. 332) and Chopin (two mazurkas and a nocturne).

Perhaps Horowitz cannot dazzle us with sheer power now, but that was never his long suit. His profound authority and apparently instinctive sense of the music's essence certainly do more than merely dazzle. There is no indulgent lingering over the *Kinderszenen*; that has never been Horowitz's way, nor

would it be to turn the *Arabeske* into a mere virtuoso piece. His Schumann is as elegant and vital as his Mozart and Chopin. These performances are not "interpretations" in the usual sense, for Horowitz never seeks to intrude his own personality in a way that would obscure that of the composer. There is instead an always modest but assured grasp of that elusive musical essence. One has a sense of the music's integrity, of its being communicated in its purest form. The recordings Horowitz is making now can extend his pedagogical impact for as long as aspiring pianists have access to them—but it is a much wider audience that will treasure them.

Nonesuch has provided not only superb sound but documentation that is pretty treasurable in itself, with some pictures from Horowitz's earliest years as a touring prodigy, a lively and enchanting interview-portrait by Joseph Horowitz, and a little biographical résumé from the program booklet for the birthday recital in London. A splendid presentation of a recording anyone who cares about the piano and its literature will want.

Richard Freed

MOZART: *Sonata No. 17, in D Major (K. 576); Sonata No. 12, in F Major (K. 332)*. **CHOPIN:** *Mazurka in C Major, Op. 24, No. 2; Nocturne in B-flat Minor, Op. 9, No. 1; Mazurka in B Minor, Op. 33, No. 4*. **SCHUMANN:** *Arabeske, Op. 18; Kinderszenen, Op. 15*. Mieczyslaw Horowitz (piano). NONESUCH ● 79202-1, © 79202-4, © 79202-2 (70 min).

on color and atmosphere but somewhat lacking in tensile strength compared with the recent versions by Simon Rattle (Angel) and Esa-Pekka Salonen (CBS). The central movement has more of a Brahmsian tinge than usual, and the finale goes swiftly, with a powerful drive. *En Saga* remains a singular work in its contrasting of Stygian darkness with points of light cutting through here and there. Again, Saraste gives a highly evocative reading, but one somewhat lacking in cumulative tension, particularly compared with Vladimir Ashkenazy's remarkable recording for London—also paired, by the way, with the Fifth Symphony. The bonus here, and by far the best performance, is Sibelius's last great masterpiece, *Tapiola*. Not only is the playing more taut and vital, but the recorded sound is brighter and more sharply focused. D.H.

R. STRAUSS: *Also sprach Zarathustra; Don Juan* (see Best of the Month, page 103)

TCHAIKOVSKY: *Manfred Symphony, Op. 58*. Concertgebouw Orchestra, Riccardo Chailly cond. LONDON © 421 441-4, © 421 441-2 (56 min).

Performance: *Strongly lyric*
Recording: *Handsome*

TCHAIKOVSKY: *Manfred Symphony, Op. 58*. London Symphony Orchestra, Michael Tilson Thomas cond. CBS © MK 36673 (55 min).

Performance: *Creditable*
Recording: *Lean and clean*

Riccardo Chailly avoids emphasizing the bombastic aspects of this sprawling, Berlioz-like score, concentrating instead on its lyrical and coloristic elements, particularly in the opening movement. The Alpine Fairy of the scherzo is perhaps not quite as diaphanous and elusive as some I've heard, but the contrasting trio section falls on the ear most gracefully, and there is effective contrast between the calm and agitated passages in the pastoral third movement. The nearly twenty-minute finale can tempt a conductor to "chew the scenery," but, as in the first movement, Chailly concentrates on line and color and lets Tchaikovsky's musical rhetoric work on its own terms without any overemphasis. The disciplined yet warm performance is enhanced by splendid recorded sound.

I think of Michael Tilson Thomas in terms of the lighter Tchaikovsky works, such as his finely honed 1971 Boston Symphony version of the First Symphony on Deutsche Grammophon and the later recordings of the Suites Nos. 2 and 4 with the Philharmonia on CBS. While his *Manfred* Symphony recording is clean-cut and thoroughly creditable, the fiery music seems at odds with his essentially restrained temperament and the coolish sonics of the EMI studio in London.

I was surprised to find that the Thomas CD derives from a 1979 analog taping, which was apparently held in the vault all these years. Trotting it out now, no doubt because of Thomas's recent appointment as principal conductor of the London Symphony, does him no service. Neither this *Manfred* nor his recent recording of the Mahler Third is representative of this conductor's best work, which is to be found particularly in the American repertoire. *D.H.*

WAGNER: *Die Walküre*. Reiner Goldberg (tenor), Siegmund; Cheryl Studer (soprano), Sieglinde; Eva Marton (soprano), Brünnhilde; James Morris (bass), Wotan; Waltraud Meier (mezzo-soprano), Fricka; Matti Salminen (bass), Hunding; others. Bavarian Radio Symphony Orchestra, Bernard Haitink cond. EMI/ANGEL © CDCD-49534 four CD's (232 min).

Performance: *Excellent, but ...*
Recording: *Cloudy*

Bernard Haitink's new recording of *Die Walküre* would be easier to recommend if it hadn't been preceded by James Levine's superb set on Deutsche Grammophon. Haitink's recording is so well conducted and authoritatively sung that it will undoubtedly please discriminating Wagnerites and put to rest the notion that this is a poor age of Wagnerian singing. But the Levine recording is far more consistently satisfying.

Only one of Haitink's principals tops Levine's cast, and that's Reiner Goldberg, who gives a virile, heroic portrayal of Siegmund. With his Italianate tone, he could become a Wagnerian Franco Corelli. Cheryl Studer's Sieglinde is nothing like Jessye Norman's for Levine, but Studer's slighter voice conveys the character's delicate girliness. She might be more credible if there weren't an audible struggle to do justice to the grander passages of the Act I love duet.

Eva Marton seems, at first, to have at least as much dramatic involvement as Levine's Brünnhilde, Hildegard Behrens, but in the more passionate moments Marton seems to have only one dramatic color—loud and argumentative. Also, her large, mezzo-ish voice, which is surprisingly phonogenic compared with her stage performances, becomes clouded with excessive vibrato when it's under pressure.

James Morris, the Wotan for both Haitink and Levine, is suaver under Levine, sometimes self-consciously so. But perhaps that's the way Wotan ought to be. Morris delivers more vocal thunderbolts for Haitink, but it often costs him the elegant sense of line that makes his Wotan unique in modern times. Generally, he is in more strident vocal form in the new set. Both Waltraud Meier (Fricka) and Matti Salminen (Hunding) are nearly everything one could hope for in their respective roles,

but so are Christa Ludwig and Kurt Moll for Levine.

Haitink's conducting burns at a lower temperature than Levine's, and the magisterial refinement he brings to the score might normally make his interpretation a welcome alternative to Levine's feverishness. Nevertheless, you don't have to know that Haitink had never conducted the work prior to this recording to recognize his lack of experience with it. Many of the musical events that should unfold organically arise bump-tiously. There are hints of personality from the Bavarian Radio Symphony Orchestra, but, frankly, the distant, overly resonant engineering makes the orchestra sound as if it were off in the next room. There's no excuse for such poor engineering in a project as important as this. Still, because of the strong casting and Haitink's promise as a Wagner conductor, I look forward to subsequent installments of the *Ring* cycle from him. *D.P.S.*

COLLECTION

ANDRÉ WATTS: *At Carnegie Hall*. Haydn: *Piano Sonata No. 58, in C Major (Hob. XVI:48)*. Mozart: *Piano Sonata No. 12, in F Major (K. 332)*. Schubert: *Piano Sonata in A Minor, Op. 143 (D. 784)*. Brahms: *Four Piano Pieces, Op. 119*. André Watts (piano). EMI/ANGEL © 4DS-49094, © CDC-49094, (72 min).

Performance: *Warmly satisfying*
Recording: *Fine live take*

The story of how André Watts came to national attention at the age of sixteen, when he substituted on short notice for Glenn Gould as soloist with Leonard Bernstein and the New York Philharmonic, is almost as well known now as Bernstein's own breakthrough nearly twenty years earlier as a last-minute replacement for Bruno Walter. Watts has fared much better than many another brilliant performer who made it big in his teens. He did not allow himself to be pressured or exploited but chose to develop at a pace determined by considerations of maturity and depth, in the conviction that a true artist (in contradistinction to a mere celebrity) is one who never stops growing.

Angel made this handsome recording last April at the Carnegie Hall recital in which Watts celebrated his twenty-fifth-anniversary season. The program of Haydn, Mozart, Schubert, and Brahms is a strong one, reflecting obviously deep musical sympathies. (It's a special pleasure to encounter this particular Haydn sonata outside the context of an "integral" recording.) Throughout the sequence, the performances are consistently and warmly satisfying on the intellectual and emotional levels as well as technically. The recorded sound is of studio quality, but you'd know these performances were live even without the applause. *R.F.*

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60	Adcom	6
80	Altec Lansing	20-21
192	American Int'l Audio	116, 117
58	API-Energy	23
45	API-Mirage	102
	Audio-Technica	109
164	Azden	113
	BMG Compact Disc Club	24-25
157	Cambridge SoundWorks	34-35
	Carver	8-9
	CBS Columbia House-CD Club	12-13
56	Component Guard	69
68	Coustic	45
38	Coustic	47
8	Coustic	49
18	Coustic	51
	Crutchfield	53
54	Dahlquist	113
	Delco Electronics	40
	Design Acoustics	109
71	Discount Music Club	125
1	Electronic Wholesalers	121
58	Energy	23
	Ford Audio	11
66	Highvoltage	124
	Illinois Audio	118
172	Int'l Hi-Fi Distributors	124
39	J&R Music World	114-115
2	Klipsch	27
55	Koss	65
20	Magnepan	48
25	Maxell	67
29	McIntosh Laboratory, Inc.	Cover 3
48	Miller and Kreisel	101
45	Mirage	102
	NAD USA	38-39
35	Omnispeaker	33
	Perfectbound Press	112
	Philip Morris-Marlboro	Cover 2, 1
	Philip Morris-Merit	55
	Philips	58-59
	Pioneer-Car	28-29
	Pioneer-Home	78-79
90	Polk Audio	4-5
	PolyGram	77
94	Pyle Industries	16
	Radio Shack	31
	RCA Direct	24-25
96	Recoton	111
99	Sansui	63
101	Scope Electronics	125
103	Sherwood	14-15
104	Shure Bros.	112
181	Technics	Cover 4
6	Telarc	64
182	Toshiba	80
35	Tripod Int'l-Omnispeaker	33
37	U.S. Video Source	68
43	U.S. Video Source	71
46	U.S. Video Source	75
185	Velodyne	19
36	Warner Bros. Records	60
	Wisconsin Discount Stereo	122-123
	Yamaha	2
190	Zenith	74

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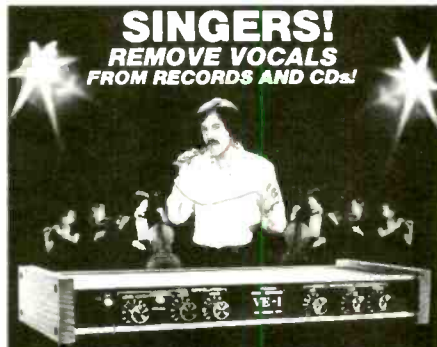
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by Christie Barter
& Ron Givens

SINCE the multi-Platinum album "New Jersey" was released, **Bon Jovi** has been touring constantly, but only now has the quintet made its way back to the U.S. The band started in Dublin on Halloween and worked its



Jon Bon Jovi: nonstop tour

way all over Europe, only taking time out to visit the Soviet Union and set up a massive benefit concert that will take place in Moscow this summer on the twentieth anniversary of Woodstock. After a quick swing through Japan and a couple of dates in Hawaii, Bon Jovi touched down on the American mainland with a nonstop set of dates that began in Dallas in January, followed by concerts on the East Coast and in the Midwest and then, finally, a sweep of the West Coast. Altogether, the band will have been nearly a year on the road and away from home in the state that gave that last album its name. □

THROUGHOUT the ever-changing history of **Starship**, only one thing has remained constant: success. From the band's beginning, as a spinoff from Jefferson Airplane originally known as Jefferson Starship, to its current incarnation, with no original members remaining,

this organization has spawned one hit single after another. Now, in the wake of three No. 1 singles from its past two albums, **Starship** is releasing a new record on **Grunt/RCA**. Among the tracks are *Wild Again*, from the soundtrack for the movie *Cocktail*, and *It's Not Enough* by Martin Page, one of the writers of **Starship's** chart-topping *We Built This City*. Meanwhile, members of the original **Jefferson Airplane** have gotten together for a reunion, which is expected to yield an album as well. □

SIGNIFICANT new signings at **BMG Classics** include British conductor **Colin Davis**, who's been taken on board for a five-year period with a contract calling for some twenty recordings. A large contingent of Soviet artists has been signed, too, including conductor **Yuri Temirkanov**, violinist **Vladimir Spivakov**, violist **Yuri Bashmet**, and seventeen-year-old pianist **Evgeny Kissin**.

BMG has also made a worldwide distribution agreement with **Deutsche Harmonia Mundi**, whose artists include harpsichordist-conductor **Gustav Leonhardt**. □

THE classical Arabesque label has launched a "sister label" devoted to jazz. Presided over by pianist **Billy**

Taylor, the new label is called **Taylor-Made**. "For the first time in twenty years," Taylor said recently, "I'm serious about recording again. Although I have great visibility on television and radio, music is documented by what you've done on record. What I'm doing in my music [today] is a lot different from what I was doing twenty years ago. During these two decades, I've been looking into the history of jazz, writing a book, and I've done a lot of work formalizing my ideas about what jazz is all about. This has contributed to the growth of my ideas in my music as well."

The first **Taylor-Made** release is "White Nights and Jazz in Leningrad" by the **Billy Taylor Trio**, derived from a series of concerts in Russia last May. The Leningrad concert was filmed by **CBS** and shown subsequently on the network's program *Sunday Morning* hosted by **Charles Kuralt**.

The second album in the new label's initial release is simply titled "Solo" and is, in fact, Taylor's own first solo album. □

THE Metropolitan Opera has released a new album in its series of **Historic Broadcast Recordings**, the December 4, 1954, performance of **Giordano's Andrea Chenier**, conducted by **Fausto Cleva**.

Starship: nonstop success



Taylor: label launch

The cast includes **Mario del Monaco** in the title role, **Zinka Milanov** as **Maddalena**, and **Leonard Warren** as **Carlo Gérard**. A gift from the **Texaco Philanthropic Foundation** made it possible to utilize compact disc technology for the first time in the **Historic Broadcast** series, and the **Andrea Chenier** recording is the first in the series to be offered in both **LP** and **CD** versions. The album will be mailed to contributors of \$150 or more to the **Metropolitan Opera Fund**, P.O. Box 930, New York, NY 10023. Don't forget to specify format. □

ATLANTIC Records has released the first five **Duke Ellington** albums in a series of ten titled "Duke Ellington: the Private Collection." The recordings were all personally produced by Ellington but remained in his possession; they are being made available now for the first time by the Ellington family.

The first five individual titles are "Studio Sessions: Chicago, 1956"; "Dance Concerts: California, 1958"; "Studio Sessions: New York, 1962" and "New York, 1963"; and "The Suites." The last contains two longer compositions, one for an unreleased art film, *The Impressionists at the Racetrack*, and the other for a ballet, *The River*, commissioned by the **American Ballet Theater**. □

POLYGRAM RECORDS

RCA RECORDS

PETER LEVINSON COMMUNICATIONS



LONDON is the first record company (to our knowledge) to take the MTV marketing approach to the classical repertoire. Set for a first run on PBS television stations is a four-minute Interlink Productions video featuring Luciano Pavarotti. Accompanied by pianist John Wustman, the tenor sings *M'appari tutt'amor* (*My Love Is Like a Dream*), the popular aria from Friedrich Flotow's opera *Martha*, in a take from London's fast-selling "Pavarotti at Carnegie Hall." At press time that album had reached the No. 1 spot on *Billboard's* classical chart, and its staying power will no doubt owe much to this promotional video.

The latest Pavarotti release on London is actually a reissue on two compact discs of the album containing (on three LP's) his recordings of Leoncavallo's *Pagliacci* and Mascagni's *Cavalleria rusticana*.

Speaking of videos, London is set to release the first



Reed: stripped-down sound

first for the label. After recording it with producer Don Was of Was (Not Was) in the fall, she played a benefit concert in Austin, Texas, for the Rhythm and Blues Foundation. At the end of the year, she toured Europe with her old pals Little Feat and taped a cable-TV special in New Orleans with the Neville Brothers. Then it was on to the Rocky Mountains, where she played some acoustic dates at a number of ski resorts. Now, to promote the new album, "Nick of Time" (a March release), she'll hit the road again with a full band. □

"YOU can't beat two guitars, bass, and drum," says Lou Reed, which may explain the stripped-down sound of his new Sire release, "New York." Reed and Mike Rathke are the guitarists. Rob Wasserman is heard on bass, album co-producer Fred

Raitt: on the road



classical recording in the pop-style compact disc video (CD-V) format. The artist is Joshua Bell, and the video portion of the five-inch disc shows him performing, with pianist Samuel Sanders, Brahms's Hungarian Dance No. 1. As with pop CD-V's, the video is supplemented by an audio-only program drawn from the same album that contained the "single"—in this case the young American violinist's first recording for the label, last year's "Presenting Joshua Bell." □

THE new Capitol album by Bonnie Raitt is her first in more than two years and her

Maher and former Velvet Underground member Maureen Tucker play drums, and Dion DiMucci, the album's mixdown engineer, Jeffrey Lesser, and Reed himself did the background vocals. Appropriately enough, Reed recorded the album in New York, and the fourteen tracks were done in the order they appear on the album. "It's meant to be listened to in one fifty-eight-minute sitting," Reed says, "as though it were a movie." □

WHEN four talented young musicians, all virtuoso recorder players, get together and call themselves the Amsterdam Loeki Stardust Quartet, you figure they've got to be up to something a little different. Well, they are. As they demonstrated on their first American tour in 1987, they are doing for the recorder what the Kronos Quartet has done for the string quartet—that is, they have brought a fresh and unconventional approach to a genre of music that routinely courts the danger of sounding merely academic.

Academic the ALSQ is not. Extending the repertoire of the recorder to include jazz and even present-day pop, the quartet travels with an impressive array of some thirty Renaissance and Baroque instruments, ranging from an eight-inch soprano

to a bass recorder measuring over six feet. And they are traveling in the U.S. again now, having begun a cross-country tour at the University of Maryland on February 18. From there, with stops in between, they headed north to New York and Montreal, west to San Francisco and San Diego, and back east to Boston for a final date on March 6.

The Amsterdam Loeki Stardust Quartet has two albums on the L'Oiseau-Lyre label, both of which have won Europe's prestigious Edison Award—"Virtuoso Recorder Music" in 1986 and "Baroque Recorder Music" in 1987. □

GRACENOTES. A&M Records is putting out three CD's of music recorded live at the Knitting Factory, an avant-garde musical outpost of jazz and new music in New



Loeki Stardust Quartet

York City. . . . Jimmy Witherspoon has a new live album on Fantasy, recorded at the Biltmore Hotel in Los Angeles. . . . Relativity Records has issued a wealth of show music on its First Night label, including London stage and concert productions of *Cabaret*, *Kiss Me Kate*, *Wonderful Town*, and *Mack and Mabel*. . . . Virgin has rereleased Philip Glass's classic "North Star" album of 1977. . . . A debut album by Show of Hands was released by I.R.S. in January, only weeks after the trio's return from China, where it performed nine consecutive dates at the 13,000-seat Shanghai Auditorium. □

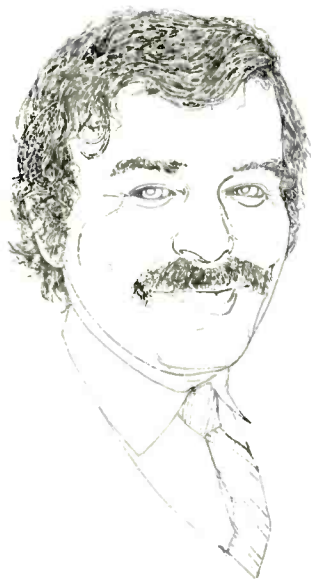
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by Ralph Hodges



THE OPTICAL TURNTABLE

IT has been a while—about seven years, in fact—since a company called Finial Technology announced that it was preparing to play LP records with beams of light. In November of last year, Finial's engineering vice president, Robert Stoddard, began talking to the Audio Engineering Society about what, precisely, he had in mind, and by the time you read this he will have demonstrated the optical turntable at the 1989 Winter Consumer Electronics Show.

Perhaps I should have waited for that event before venturing into print, but Finial's several previous demonstrations have been cautious affairs that have left witnesses wondering whether the machine only works during certain favorable phases of the moon. In terms of hard information, I think I can do better than that right now. In fact, I have even located one of the beasts—in the household of Dan Gravereaux, formerly a highly placed engineer in the now-defunct CBS Technology Center and a heavily involved consultant on the laser-turntable project. I also talked with Fred Catero, a veteran recording engineer and producer with im-

pressive credentials who also consulted with the Finial people and has followed the machine through much of its evolution.

But first, just what is the Finial machine as it stands today? It is a mechanism of four laser beams, two of which read the left and right channels of an LP's groove, while the other two govern the lateral and vertical positioning of the optical system as it transits the disc. It is not a trivial mechanism. A diagram in Stoddard's paper shows an assembly of well over two dozen photodiodes, lenses, mirrors, and sensors, and this leaves out the various motors that shift things around to accommodate record warps, thickness variations, and variable groove pitch and width.

Unlike previous stabs at this technology, which evidently date back to 1929, the Finial LT-1 reads not the instantaneous position of the groove wall but instead the modulation angle, which is then translated into information about frequency and amplitude, using electronics mathematics that Gravereaux considers uniquely elegant and quite beyond anything he had previously thought possible. But even these efforts did not solve the problem of excessive modulation angles, which are routinely created when the back facets of the cutting stylus get involved in the mastering process along with the front—and which are almost inevitable, Gravereaux says, when a "hot" recording contains things like snare drums and muted trumpets. The problem seems to have been surmounted, but Gravereaux is not sure how and would not be at liberty to explain it anyway.

Another huge stymie factor was a familiar one: dust. As Catero suggested, a mechanical stylus simply nudges much groove debris aside without responding to it audibly. But a beam of light won't do that. It plays practically everything. Gravereaux said that he has had to be compulsive about record hygiene with his current player, but the difficulties are much abated from those of previous versions. It seems that while the reflectivity of the groove wall is quite low, the reflectivity of a dust particle is quite high, and the machine is able to make a distinc-

tion that leads to a correction. Again, just how the correction is made remains classified.

A laser beam will not wear a record (although an earlier version of the LT-1 reportedly could burn a hole in one if it was not rotating),

The Finial device makes a badly worn record sound like exactly what it is—certainly no worse, and occasionally perhaps a little better.

but a mechanical stylus will, and most of the world's LP's have been played by a mechanical stylus at least a few times. According to Catero, the Finial device makes a badly worn record sound like exactly what it is—certainly no worse, and occasionally perhaps a little better, because the laser spot does a more effective job of averaging the useful contours of the groove wall than the unyielding curvature of a diamond tip. That's the theory, anyway, and Gravereaux has no problem with it.

Both men acknowledge a subtle difference between the sound of the LT-1 and what is obtained from a conventional tonearm and phono cartridge. As for a preference, they remain uncommitted, although Gravereaux's son has plumped solidly for the laser.

Catero is a bit troubled by the many millions of dollars that have gone into the LT-1's development and wonders how this investment can be recouped. High-tech spin-off applications will be many, but, this late, can the device ever be the consumer product that was intended? It's hard to argue with his misgivings, especially since the latest projected price for the LT-1 is \$3,700, and it will go anywhere but down. Yet, for audiophiles, this is perhaps the final development in a precious and glorious heritage.

Afterword: Sadly, the price did go anywhere but down. Shortly after I wrote this column, Finial, citing high production costs, abandoned marketing plans for the LT-1. But the technology is still there, and it will be heard from. □

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